The *Nikon* Guide to Digital Photography

with the

COOLPIX 990
DIGITAL CAMERA

Electronic Edition

Click *to go*

Product Documentation

Thank you for your purchase of a COOLPIX 990 digital camera. The documentation for this product includes the manuals listed below. Please be sure to read all instructions thoroughly to get the most from your camera.

Fast Track Guide/For Your Safety

In addition to taking first time users step-by-step through the process of setting up and using the camera, the printed *Fast Track Guide* gives a quick overview of camera settings. *For Your Safety*, printed on the reverse of the *Fast Track Guide*, lists warnings and cautions that should be observed when using and storing your camera, together with legal information. Please keep this document where all those who use the camera will read it.

Menu Guide

This printed guide provides an overview of the camera's menus.

Guide to Digital Photography

The *Guide to Digital Photography* (this manual, available in both electronic and printed formats) provides detailed information about your camera. The electronic edition features clickable links not available in the printed guide; otherwise the contents of the two manuals are identical. Both are divided into the following chapters:

First Steps
Guides you step-by-step through the process of setting up your camera and taking your first photograph

Basic Photography
Introduces the shooting options available in A-REC mode, a "point-and-shoot" mode that gives you control over flash, focus, and image quality settings, while the camera automatically adjusts other settings for the best results

Advanced Photography
Details the shooting options available in M-REC mode, an advanced shooting mode that gives you complete control over camera settings

Playback
Explains how to view and delete the photographs stored in the camera's memory

Camera Setup
Details the options available in the SET-UP menus

Connections
Describes how to connect your camera to a television or computer

Technical Notes
Provides information on caring for your camera, camera accessories, specifications, and troubleshooting

To make it easier to find the information you need, the following symbols and conventions are used:

About A table of contents appears on the first page of the electronic *Guide to Digital Photography*. In addition, each chapter begins with an outline of the topics covered. Click on the heading to open the guide to the indicated chapter or section.

Click the icon at the bottom right corner of each page for an explanation of the symbols and conventions used in this manual.

Click the icon at the bottom of each page for an explanation of how to use the camera menus.

Click the icon at the bottom of each page for a quick overview of camera menus.

Click the icon at the bottom of each page to view an illustration identifying camera parts.

Blue text indicates a link to another part of the *Guide to Digital Photography*. To follow the link, click the blue text.

Printing this manual

While this guide is also available in printed format, you may find it convenient to print portions of the electronic edition for ease of reference. The desired pages can be printed using the **Print...** command in the Adobe Acrobat Reader **File** menu.

This icon marks cautions, information that you should read before use to prevent damage to your camera.

This icon marks notes, information that you should read before using your camera.

This icon marks tips, additional information you may find helpful when using your camera.

This icon marks references to other documentation or to another part of this manual.

This icon is used throughout these manuals to mark cross references to the *Fast Track Guide*.

This icon is used throughout these manuals to mark cross references to *For Your Safety*.

This icon is used throughout these manuals to mark cross references to the *Guide to Digital Photography*.

Life-Long Learning

As part of Nikon's "Life-Long Learning" commitment to providing ongoing product support and education, a continuing set of new and updated information is always available on-line at www.nikon-euro.com. Please visit this site to keep up-to-date with the latest in product information, tips, FAQs, and general advice on the subjects of Digital Imaging and Photography.

First Steps

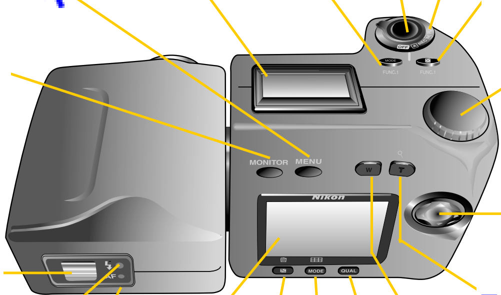
This chapter:

- Introduces you to the parts of the COOLPIX 990 and the camera menus
- Takes you step-by-step through the process of setting up your camera
- Outlines the steps involved in taking photographs and playing them back

Click *to go*

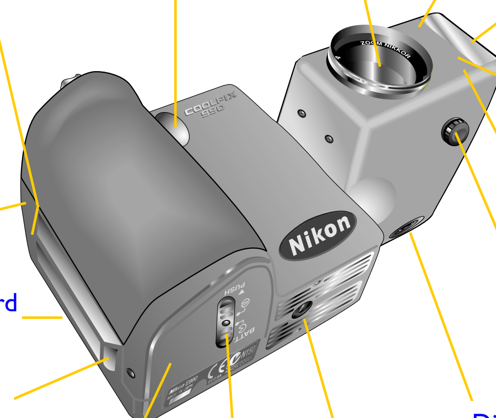
Getting to Know the COOLPIX 990

Take a few moments to familiarize yourself with camera controls, displays, and menus.



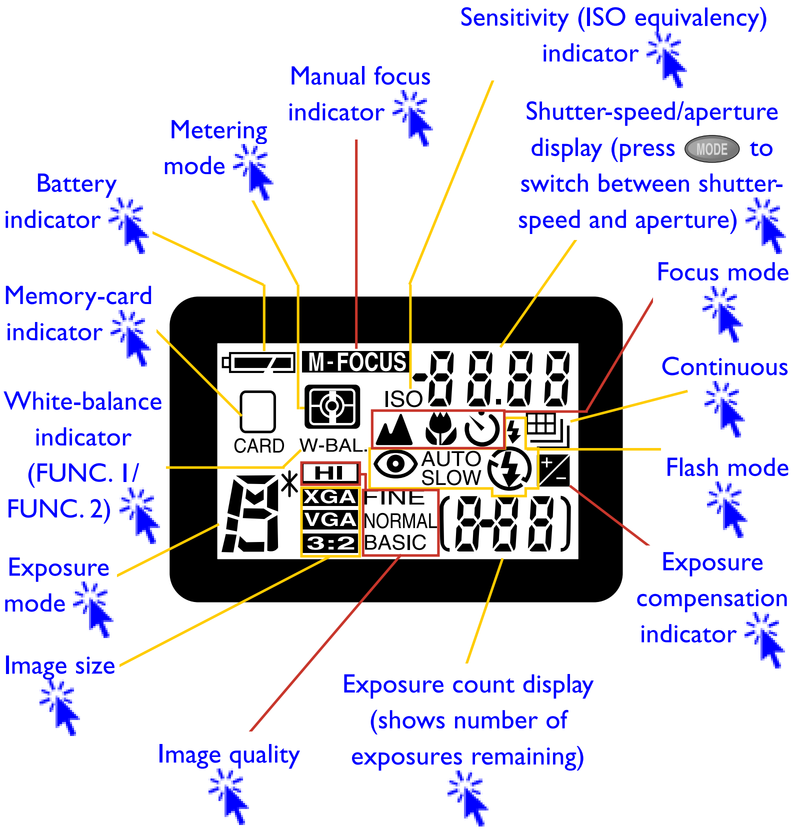
The lens section is attached to the camera body by a hinge that permits the lens to be rotated through 270°. For more information, see:

"First Steps: Taking a Picture"



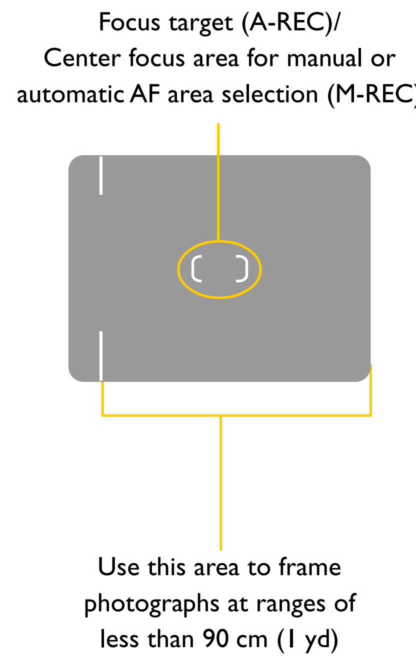
Click for more information

Control Panel



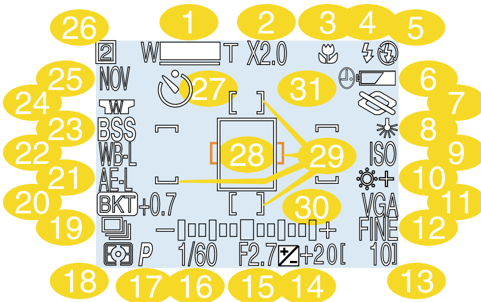
Click for more information

Through the Viewfinder



Use the diopter-adjustment dial to adjust viewfinder focus.

LCD Monitor



1 Zoom indicator
2 Digital zoom
3 Focus mode/manual focus distance
4 External flash indicator
5 Flash mode (built-in flash)
6 Battery indicator
7 Image sharpening
8 White-balance program
9 Sensitivity (ISO equivalency)
10 Image adjustment
11 Image size
12 Image quality
13 Number of exposures remaining at current settings
14 Exposure compensation
15 Aperture (f number)
16 Shutter speed
17 Exposure mode
18 Metering mode
19 Continuous (multi-shot) mode
20 Exposure bracketing indicator
21 Auto-exposure lock
22 White-balance lock
23 Best-shot selection
24 Lens converter indicator
25 Current folder
26 User set number
27 Self-timer indicator
28 Auto-exposure target (spot metering)
29 Focus areas
30 Exposure display (manual exposure mode)
31 "Date not set" icon

Camera Menus

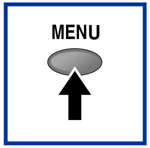
Changes to some settings can be made with the help of menus that appear in the LCD monitor. Separate menus are available for each operating mode:

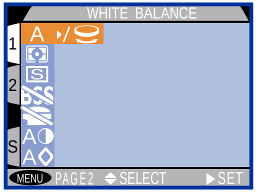
Mode	Menu	Controls
A-REC, M-REC, PLAY	SET-UP	Basic camera setup (e.g., formatting memory cards, setting time and date). SET-UP menus for M-REC and PLAY accessible from SHOOTING and PLAY BACK menus respectively. Options available depend on operating mode.
M-REC	SHOOTING	Advanced shooting options (e.g., white balance, metering)
PLAY	PLAY BACK	Playback options

Menu operations are performed with the multi selector, the MENU button, and the command dial, as described on the pages that follow.

Viewing the menus

Press the MENU button to display the menu for the current mode.



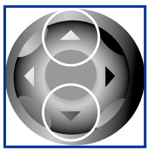


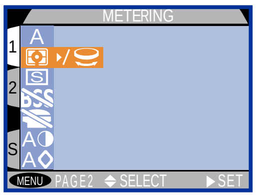
- The menu can be hidden by pressing the MENU button when MENU OFF is displayed in the lower left corner of the LCD monitor (to clear the M-REC menu from the monitor when MENU PAGE2 is displayed as shown at left, press the MENU button twice: once to display the second page of the M-REC menu, the second time to clear the menu from the screen).

Making a selection

Use the multi selector to make a selection.

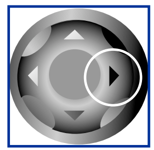
1

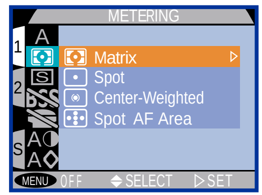




Highlight menu item

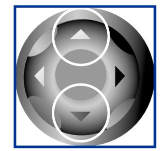
2

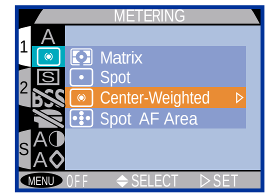




Display options

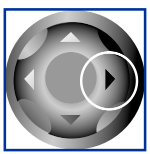
3

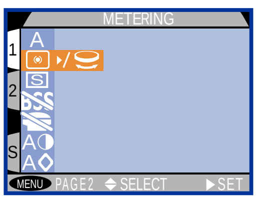




Highlight option

4





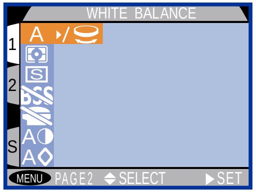
Make selection

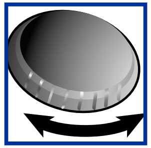
- To go back one step, press the multi selector to the left.
- The selection for some menu options is made from a sub-menu. Repeat steps 3 and 4 to select the desired setting from the sub-menu.
- Changes to settings apply as soon as the selection is made.
- In M-REC mode, the view through the lens is visible behind the main menu. Photographs can be taken while the menu is displayed by pressing the shutter-release button.
- In A-REC mode, the view through the lens can be restored by half-pressing the shutter-release button. You can take a picture at any time by pressing the shutter-release button all the way down. The A-REC menu will be restored when you remove your finger from the shutter-release button.

Using the command dial to make a selection

A icon next to a menu item indicates that the command dial can be used instead of the multi selector to make a selection.

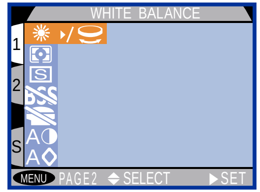
1





Rotate command dial

2



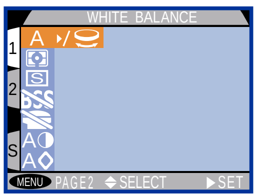
Stop when desired option is displayed

- Changes to settings apply as soon as the selection is made. You can then make further changes to other settings as described above, or use the MENU button to clear the menu from the display.

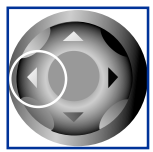
Multi-page menus

Use the multi selector to move between pages in the M-REC menu, or to access the SET-UP menu from the M-REC and playback menus.

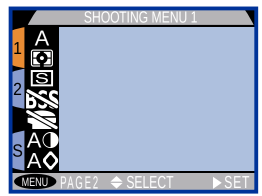
1 Position cursor in main menu



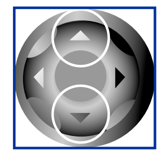
2



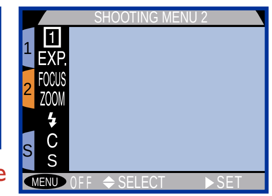
Highlight page tab



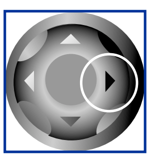
3



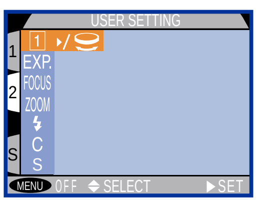
Highlight page number (**S** for SET-UP menu)



4

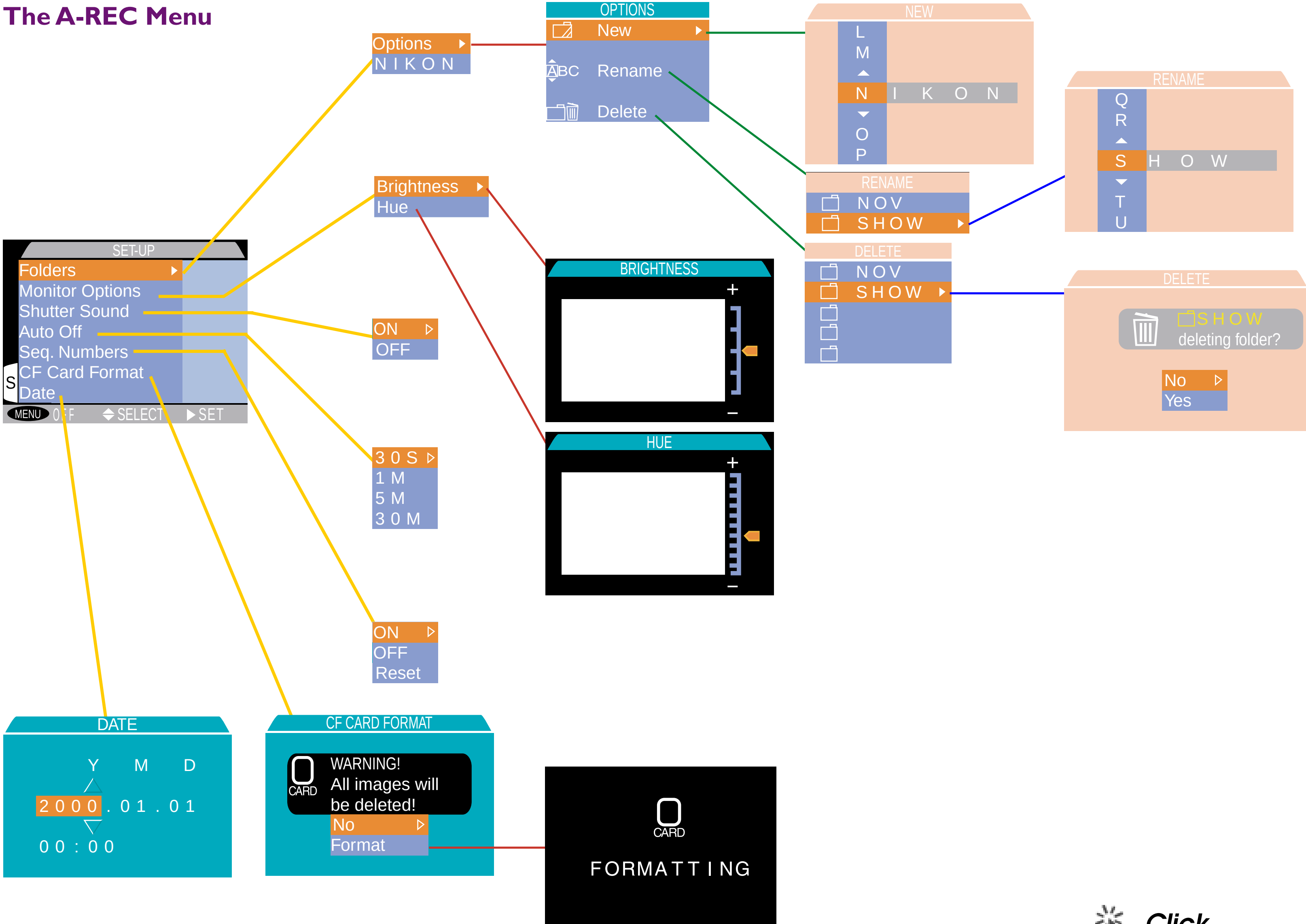


Display selected page

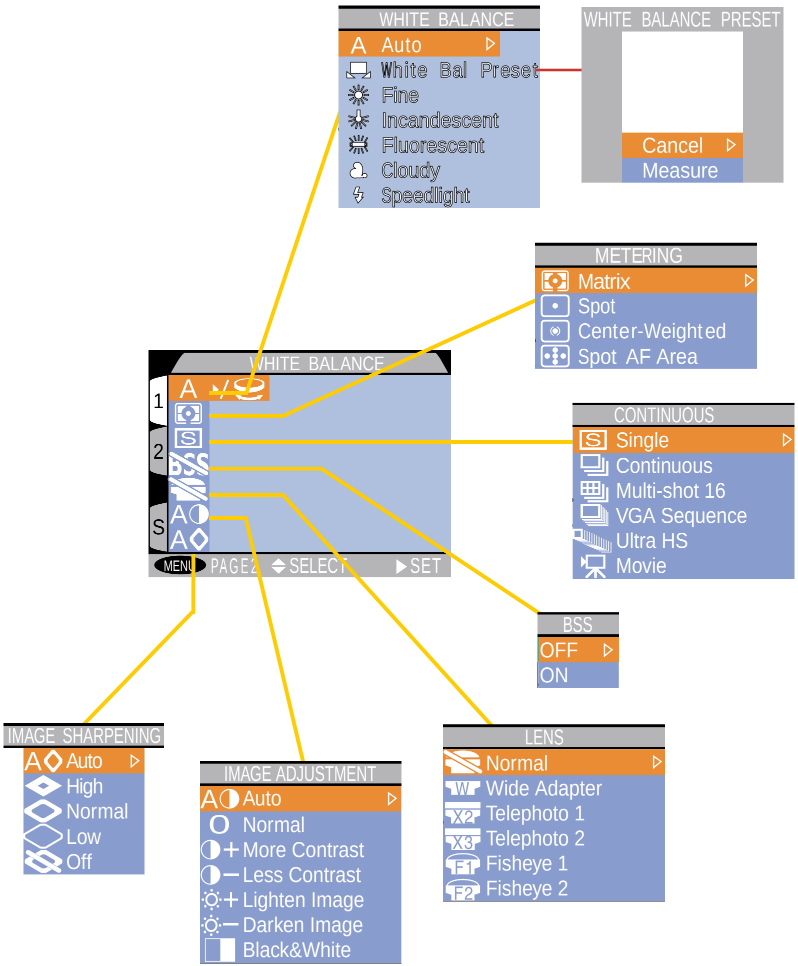


- You can also go from Page 1 to Page 2 of the M-REC menu by pressing the MENU button once.
- The SET-UP menu for playback mode can also be accessed from the main playback menu. The SET-UP menu for M-REC can be accessed from the second page of the M-REC menu.

The A-REC Menu

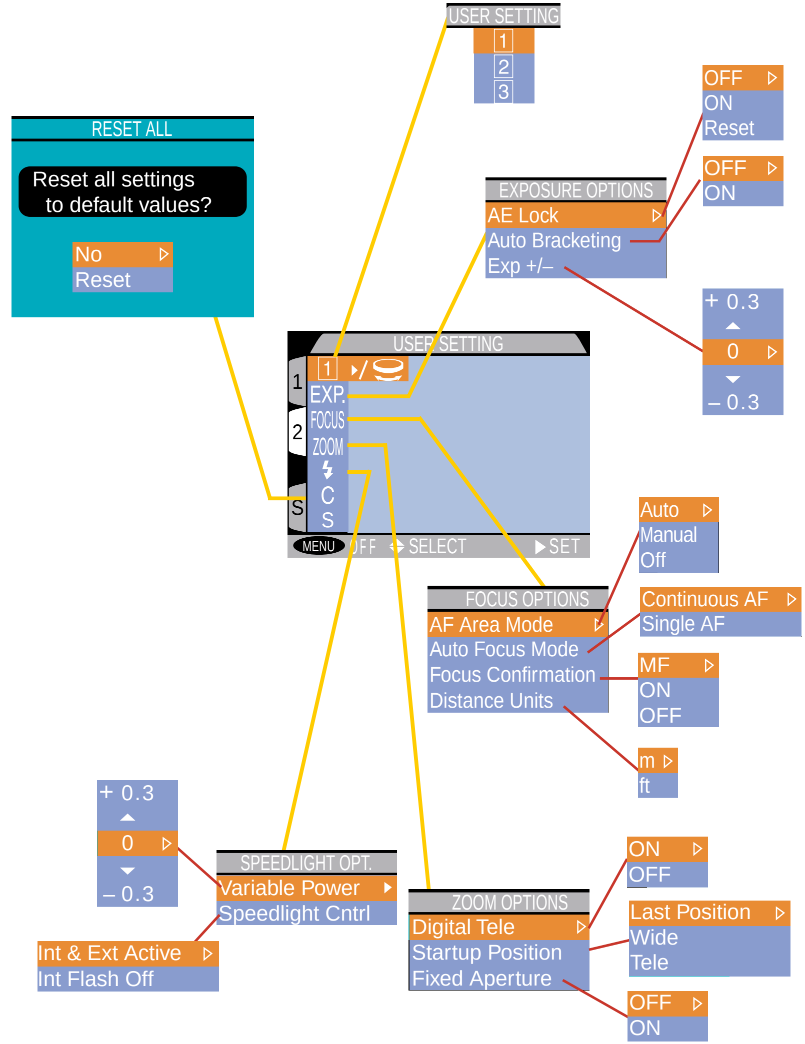


The M-REC Menu, Page 1

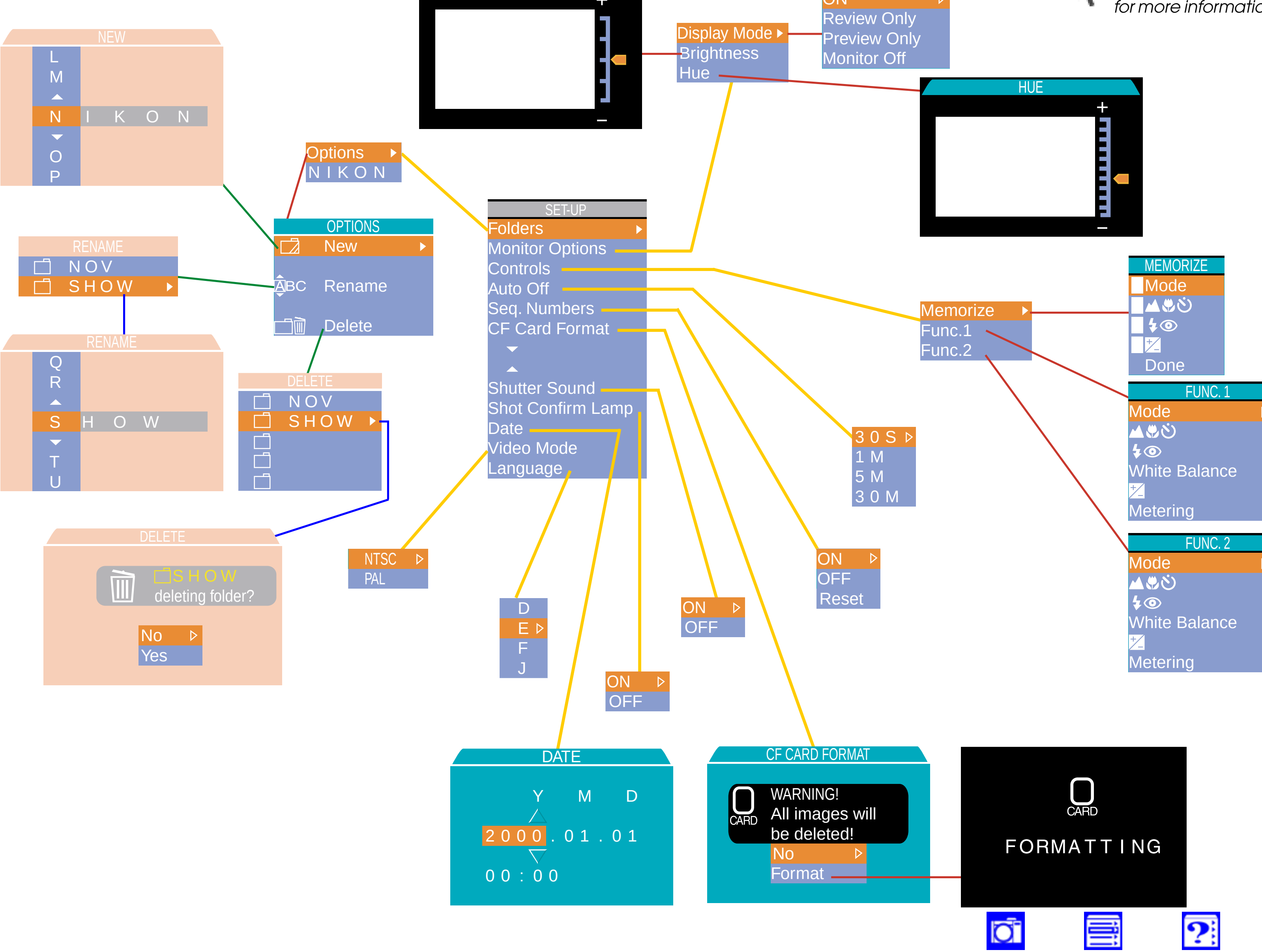


Click *for more information*

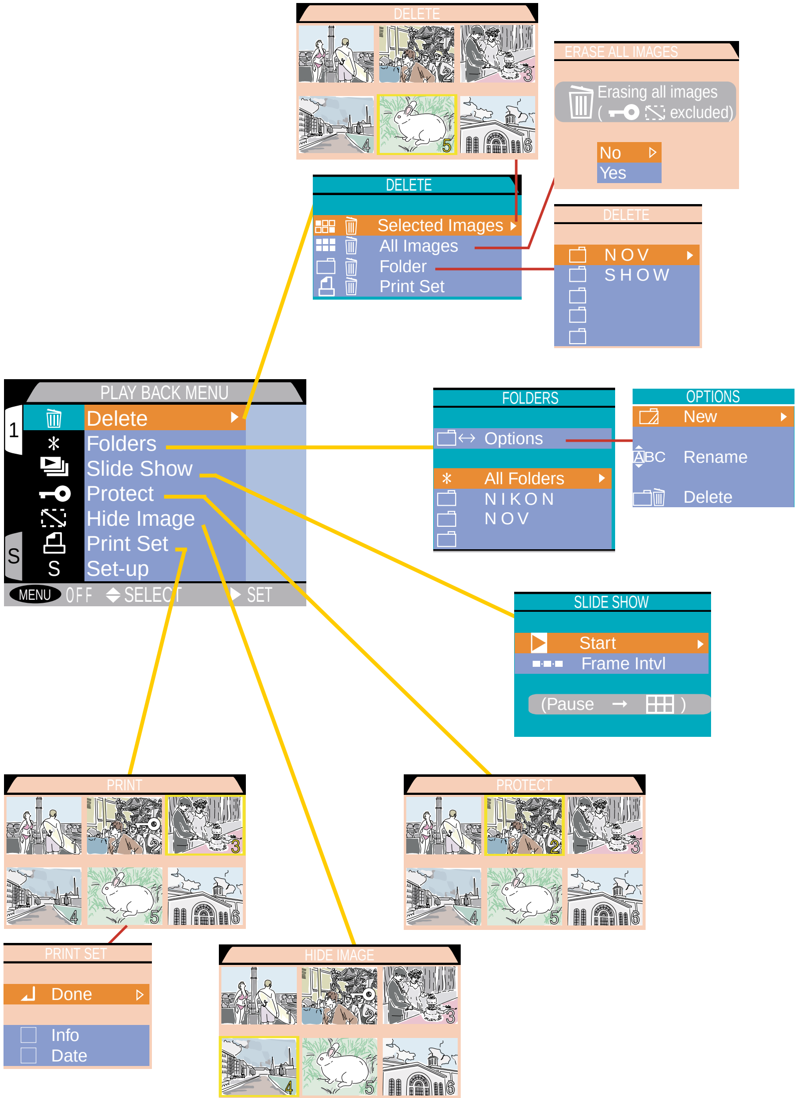
The M-REC Menu, Page 2



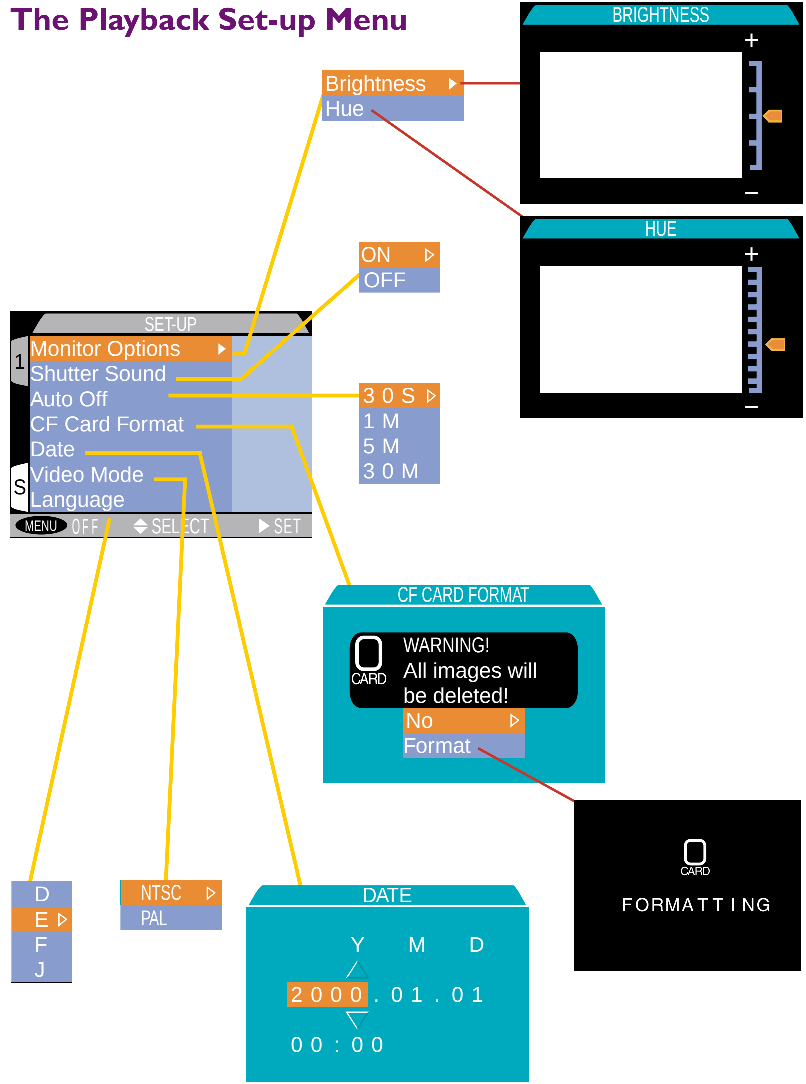
The M-REC Set-up Menu



The Playback Menu



The Playback Set-up Menu

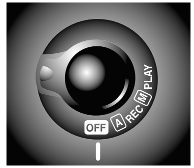


Click for more information

Putting Batteries in the Camera

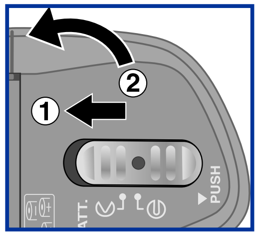
1 Turn the camera off

Turn the mode dial to the off position. If the camera is on a tripod, remove the tripod before proceeding to the next step.



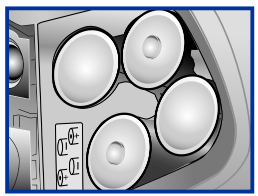
2 Open the battery-chamber cover

Firmly pressing the button in the center of the latch, slide the latch to the open position (⧀), then open the battery-chamber cover as shown at right.



3 Insert the batteries

Insert four LR6 (AA) batteries with the + and – poles oriented as shown in the label inside of the battery-chamber cover.



The batteries can be removed without affecting photographs stored on the camera's memory card. All M-REC settings except date and language will, however, be reset.

The camera's clock-calendar is powered by a separate rechargeable battery. When you put batteries in your camera for the first time or after a long period of storage, wait a few hours for the clock battery to recharge before removing the main batteries.

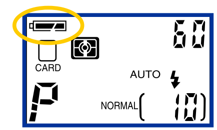
4 Close and latch the battery-chamber cover

Close the battery-chamber cover and, keeping the cover held firmly closed by pressing it where labeled "▼**Push**," return the latch to the locked position (⋹). To prevent the batteries from falling out of the camera during operation, confirm that the cover is latched.

5 Check the battery level

Turn the mode dial to A-REC and check the battery level in the control panel.





Batteries fully charged

Low battery

Replace the batteries as soon as possible.

Batteries exhausted

No photographs can be taken until the batteries have been replaced.

For more information on:

Battery types approved for use in your camera

Safe storage and handling of batteries

Extending battery life

While alkaline batteries are suitable for use in the COOLPIX 990, battery life can be extended by using high-capacity lithium or nickel-metal hydride (Ni-MH) batteries.

The following techniques can be used to extend battery life:

- Turn the LCD monitor off whenever possible (see right). Turning the monitor off eliminates the single biggest draw on battery power.
- If the batteries become exhausted, try turning the camera off and warming the batteries gently, for example in an inside pocket. The batteries may recover sufficient charge for a few extra shots with the monitor turned off.
- Use the AC adapter (available separately) when the camera is connected to a computer, when playing images back, or when using the slide-show option.

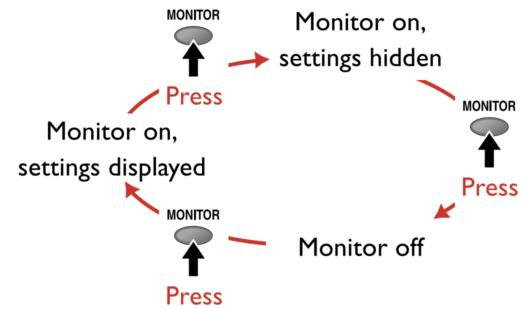
In M-REC mode, power consumption is also affected by the options in the FOCUS OPTIONS > **Autofocus Mode** and the SET-UP > **Monitor Options** > **Display Mode** sub-menus (see table below).

Display mode	Autofocus mode	Power consumption
On/Preview Only	**Continuous AF**	High
	Single AF	
Review Only	N.A.*	
Monitor Off	N.A.*	Low

* Single autofocus is used while **Review Only** or **Monitor Off** are in effect.

The MONITOR button

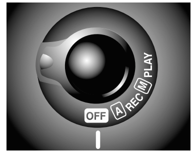
The MONITOR button controls the LCD monitor. Press the button to cycle through monitor settings as shown below.



For more information on:

Connecting to a computer
Playback
Autofocus mode
Focus options
Display mode

Inserting the Memory Card

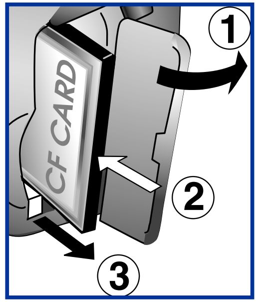


1 Turn the camera off

Turn the mode dial to the off position.

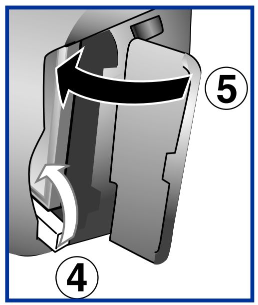
2 Insert the memory card

Open the card-slot cover (1) and insert the card (2) oriented as shown in the ▲ INSERT label on the underside of the cover, sliding it in until it is firmly in place at the back of the slot and the eject button pops up (3).



3 Close the card-slot cover

Fold the eject button back into position (4) and close the card-slot cover (5). If the button is not folded over when the cover is closed, closing the cover may partially eject the card, causing errors in recording photographs or during playback.



For more information on:

Safe handling of memory cards

Approved memory cards

Reading memory cards with a computer

Formatting memory cards

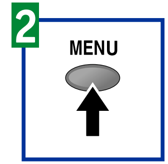
Memory cards must be formatted for use in the COOLPIX 990 before they can be used. To format the memory card:

1

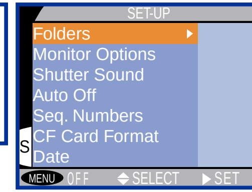


Select A-REC

2

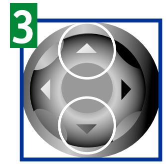


Press

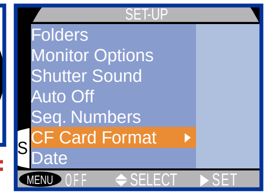


A-REC setup menu displayed

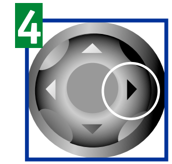
3



Highlight **CF Card Format**

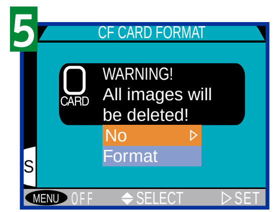


4



Press

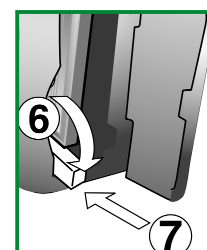
5



Confirmation dialog displayed. Press multi selector down to highlight **Format**, then press to right to format card. Do not turn camera off or remove card until "FORMATTING" message has disappeared from display. All data on card will be permanently deleted.

Removing memory cards

Memory cards can be removed without loss of data when the camera is off. To remove memory cards, turn the camera off and open the card-slot cover. Stand the eject button up (6) and press it down (7) to eject the card.



Choosing a Language

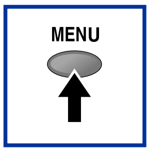
The language in which menus and messages are displayed can be set using the **Language** sub-menu.

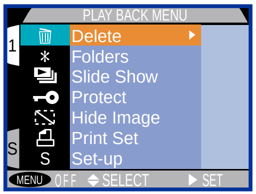


1 Turn the mode dial to PLAY

2 Press the MENU button

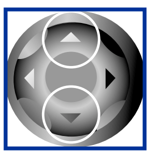
The playback menu will be displayed (the appearance of the menu will vary depending on the language currently selected).



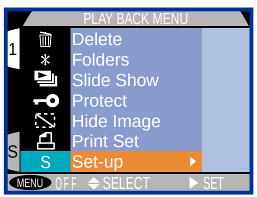


3 Display the SET-UP menu

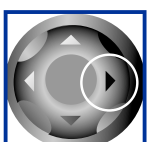
A



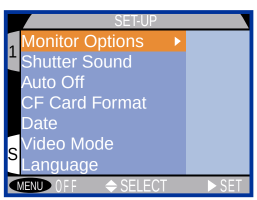
Highlight **Set-up**



B

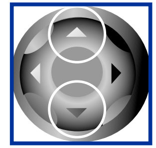


Press

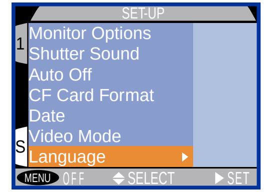


4 Choose a language from the LANGUAGE sub-menu

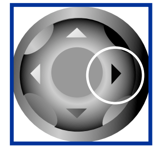
A



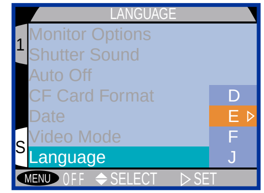
Highlight **Language**



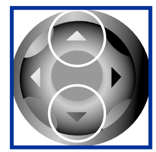
B



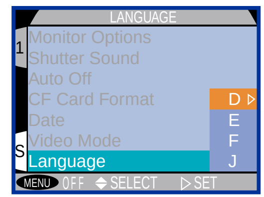
Press



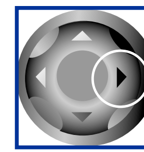
C



Highlight option



D



Press

The languages available in the **Language** sub-menu are:

D	German (Deutsch)
E	English
F	French (Français)
J	Japanese

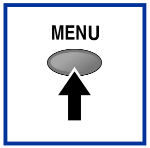
Setting the Time and Date

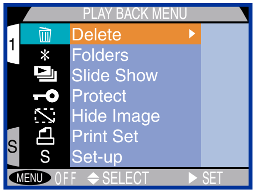
1 Turn the mode dial to PLAY



2 Press the MENU button

The playback menu will be displayed.



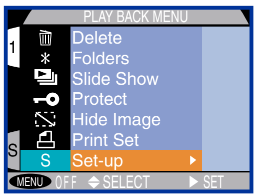


3 Display the SET-UP menu

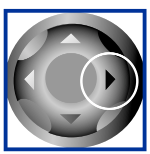
A



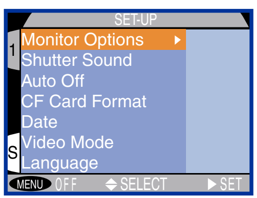
Highlight **Set-up**



B

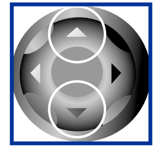


Press

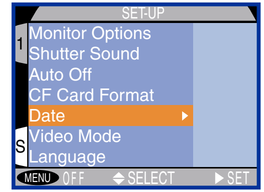


4 Display the DATE menu

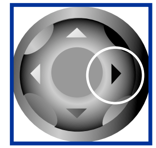
A



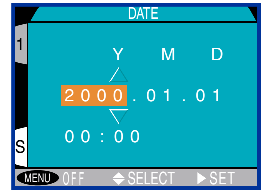
Highlight **Date**



B



Press

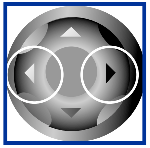


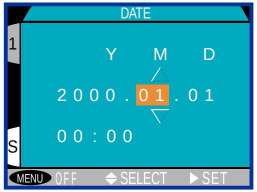
Any photographs taken before the time and date have been set will have a time stamp of "2000/01/01 0:00". Until you have set the time and date, a flashing clock icon ◷ will be displayed in the top right corner of the LCD monitor when the camera is set to A-REC or M-REC.

The clock-calendar is powered by a separate, rechargeable battery, which is charged as necessary when the main batteries are installed. If the camera has been stored with the main batteries removed for a long period of time, the clock may need to be reset. Once the main batteries have been reinserted, the clock battery will recharge in several hours, during which time the batteries should be left in the camera.

5 Set the time and date using the multi selector

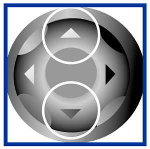
A

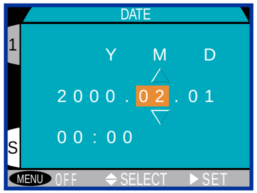




Highlight desired item

B

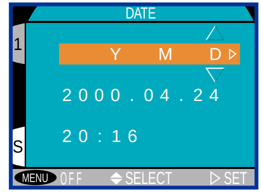


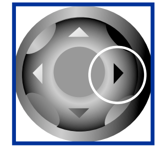


Edit selected item

6 Exit the DATE menu

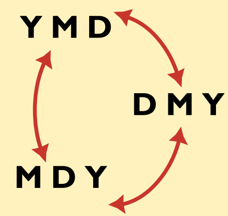
To set the time and date to the values displayed, highlight **Y M D** and press the multi selector to the right.





To exit without changing the time and date, press the MENU button.

- To change the order in which the year, month, and day are displayed, highlight **Y M D** and press the multi selector up or down to cycle through settings in the following order:



Taking a Photograph

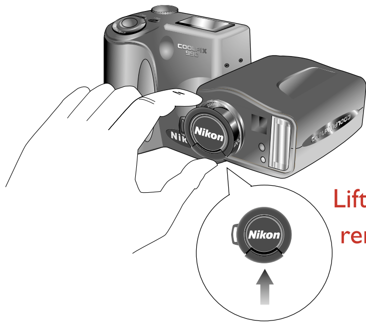
The COOLPIX 990 offers two shooting modes, A-REC and M-REC. In A-REC, the majority of camera settings are controlled by the camera in response to lighting conditions and focus distance, producing the best possible results. M-REC allows you greater control over such settings as shutter speed, aperture, and white balance.

In	you can control	the camera controls
A-REC	• Optical and digital zoom • Flash settings • Focus mode (autofocus, macro-close-up, infinity, self-timer) • Image size and quality • Exposure compensation	• Shutter speed • Aperture • Focus distance (in autofocus and macro-close-up modes) • Exposure metering • White balance • Contrast • Sharpness
M-REC	All settings listed above, as well as: • Focus area • Focus distance (manual focus) • Sensitivity (ISO equivalency) • Advance rate (single frame, continuous, video) • Best-shot selection for sharper, clearer photographs • Other settings	Depending on the exposure mode selected, the camera can control any or all of shutter speed, aperture, and focus distance in response to other settings made by the user

This section outlines the basic steps involved in taking a photograph in A-REC mode.

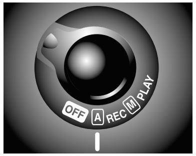
1 Remove the lens cap

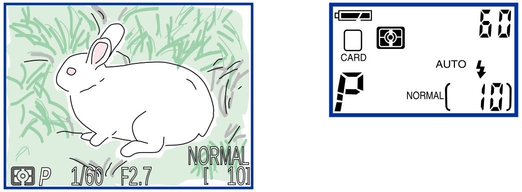
Remove the lens cap as shown below.



2 Turn the mode dial to A-REC

After a short pause, a beep will sound and current settings will be displayed in the LCD monitor and the control panel.





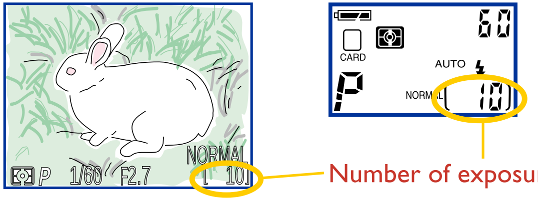
For more information on:

Deleting photographs

Image quality and size

3 Check the number of exposures remaining

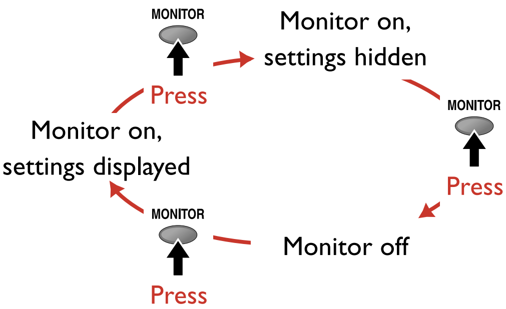
The control panel and LCD monitor show the number of exposures remaining at current settings for image quality and size.



When this number reaches zero, you will need to insert a new memory card or delete some pictures before you will be able to take more photographs. It may be possible to record more photographs at a different image quality or size.

The MONITOR button

The monitor button controls the LCD monitor. Press the button to cycle through monitor settings as shown below.



4 Adjust camera settings

When the mode dial is turned to A-REC, the following settings will return to their default values:

Setting	Default	Description
Flash mode	Auto	Flash fires automatically when lighting is poor
Focus mode	Autofocus	Camera focuses automatically at distances over 30 cm (1 ft)
Image quality	Normal*	Photographs compressed for best balance between file size and image quality
Image size	Full*	Photographs are 2048 × 1536 pixels in size
Exposure compensation	±0 EV	No exposure compensation performed

* These settings apply the first time you turn the camera on. Image quality and size are not restored to default settings the next time the mode dial is turned to A-REC (an image-quality setting of HI becomes FINE in A-REC).

For more information on:

Using the flash

Focus mode

Image quality and size

Exposure compensation

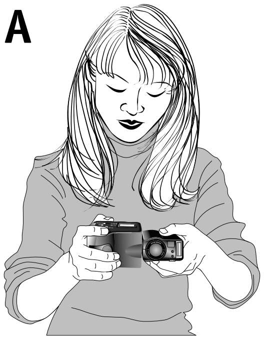
Before taking a photograph, you can make changes to these settings using the camera buttons and command dial.

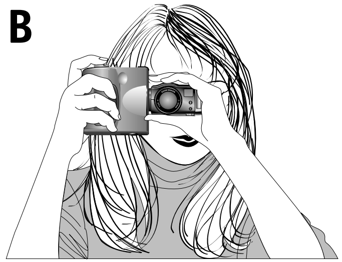
Button	Operation	Controls
	Press	Flash mode: AUTO → → AUTO (red-eye) → → SLOW → AUTO
	Press	Focus mode: Autofocus → → → → Autofocus
QUAL	QUAL Press	Image quality: NORMAL → FINE → BASIC → NORMAL
	QUAL + Press while turning command dial	Image size: Full ⇔ XGA ⇔ VGA ⇔ 3 : 2
	+ Press while turning command dial	Exposure compensation (–2.0 EV to +2.0 EV in increments of 0.3 EV)

The icons shown above are displayed in the control panel.

5 Ready the camera

To reduce blurring caused by camera shake, hold the camera firmly in both hands. Photographs can be framed in the LCD monitor (A) or the viewfinder (B).

A


B


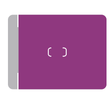
Frame photographs in the monitor when:

- you are using macro close-up
- you are using digital zoom
- you are using a lens converter
- image size is set to 3 : 2
- you want direct confirmation of camera settings or the view through the lens

Frame photographs in the viewfinder when:

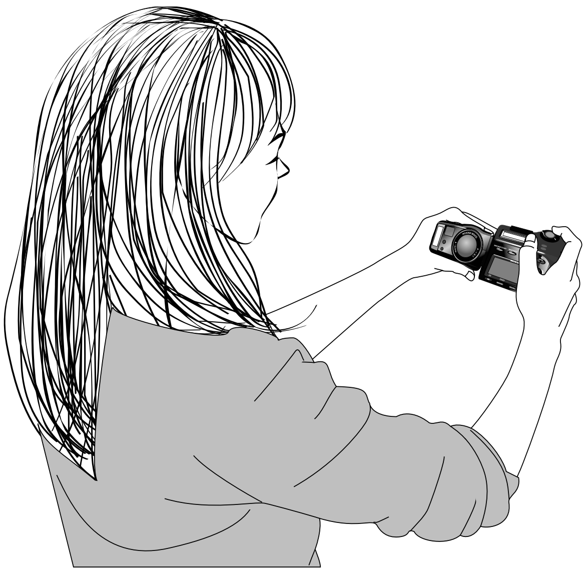
- you want to save power by turning the monitor off
- bright ambient lighting conditions make it difficult to see the display in the monitor

When framing photographs in the viewfinder at ranges of 90 cm (1 yd) or less, use the smaller of the two frames in the viewfinder display (the area shaded in purple in the illustration at right).



Keep your fingers and other objects away from the lens and flash window when taking photographs.

When framing photographs in the LCD monitor, you can take advantage of the rotating lens section to hold the camera at almost any angle. You can even rotate the lens to point at yourself and frame self-portraits in the monitor, as shown below (in this case, all indicators are hidden and the monitor shows a mirror image of what will appear in the final photograph).

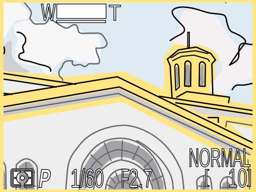
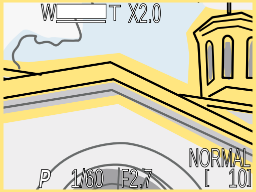


For more information on:

Macro close-up
Optical and digital zoom
Lens converters
Image size

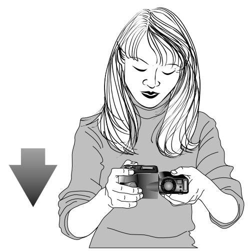
6 Select your subject

Frame the photograph using the zoom buttons.

Button	Operation	Function
W	Press	Zoom camera out (zoom position shown in LCD monitor) 
T	Press	Zoom camera in 
T	Hold for 2 s at maximum optical zoom position	Enter digital zoom mode  Digital zoom ratio can be adjusted using W and T buttons. Press W button at minimum digital zoom ratio to return to optical zoom.

7 Focus

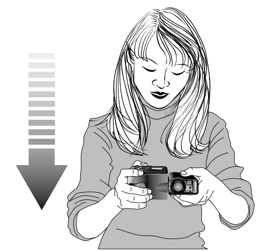
In A-REC, the camera focuses on the center of the frame, shown by the focus target in the viewfinder. Before taking a photograph, press the shutter-release button halfway to initiate autofocus, and check the status of the autofocus lamp (green) and the flash lamp (red) next to the viewfinder.



Lamp		Meaning
AF lamp	Glows steadily	Subject in focus
AF lamp	Flashes rapidly	Camera unable to focus using autofocus. Use focus lock to focus on another subject at same distance, then recompose photograph.
Flash lamp	Glows steadily	Flash will fire when photograph is taken
Flash lamp	Blinks	Flash charging. Remove finger briefly from shutter-release button, then try again.
Flash lamp	Off	Flash not required or flash set to "off"

8 Take the photograph

To take a photograph, press the shutter-release button all the way down. A beep will sound to let you know that a photograph has been taken, and the green AF lamp will blink slowly while the image is saved to the memory card.

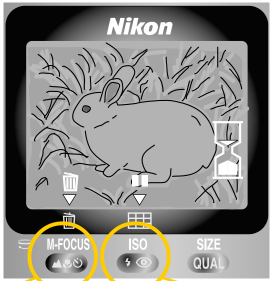


For more information on:

Autofocus
Focus lock
Focus area
Using the flash

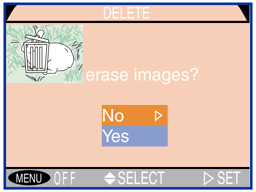
9 Check the results

After a photograph has been taken, the autofocus lamp will blink and an hourglass icon (⌛) will be displayed in the LCD monitor while the photograph is recorded. Before the photograph is transferred to the memory card, it will be displayed briefly in the LCD monitor.



Press to delete photograph

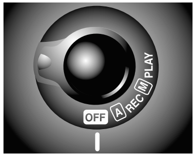
Press to pause display for 20 s. Press again to record photograph, or press 🗑 (▲❀⏲) to delete as shown at left. Photograph recorded automatically after 20 s.



Delete dialog displayed. Press multi selector up or down to highlight option, press to right to select.

- Select **Yes** to delete photograph
- Select **No** to save photograph and return to shooting mode

10 Turn the camera off



When you have finished using the camera, be sure to turn the mode dial to OFF. To avoid wasting batteries, check that the camera is off before putting it away.

11 Replace the lens cap

Replace the lens cap as shown below.



Lift latch and replace cap

✔

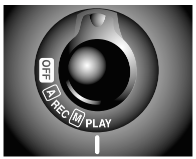
While photographs are being recorded to the memory card, the autofocus lamp will blink, and a flashing card icon will be displayed in the LCD monitor when the camera returns to shooting mode. Although additional pictures can be taken while the camera saves earlier photos to the card, you should not eject the memory card, remove the batteries, or unplug the AC adapter (available separately) until the lamp has stopped blinking and the icon has disappeared from the monitor. Removing the card or cutting power while recording is in progress could result in loss of data.

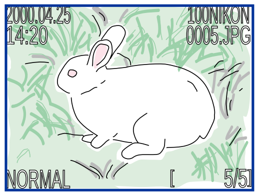
Playback and Deletion

Photographs stored on the memory card can be played back for review or deletion.

1 Turn the mode dial to PLAY

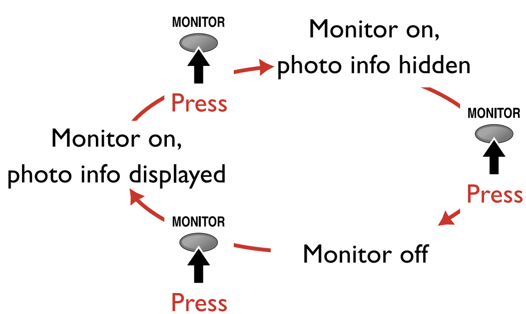
The most recent photograph in memory will be displayed in the LCD monitor.



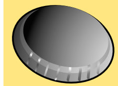
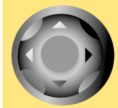
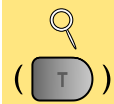
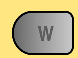
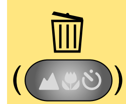


The MONITOR button

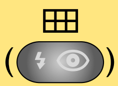
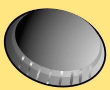
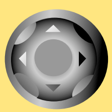
The monitor button controls the LCD monitor. Press the button to cycle through monitor settings as shown below.



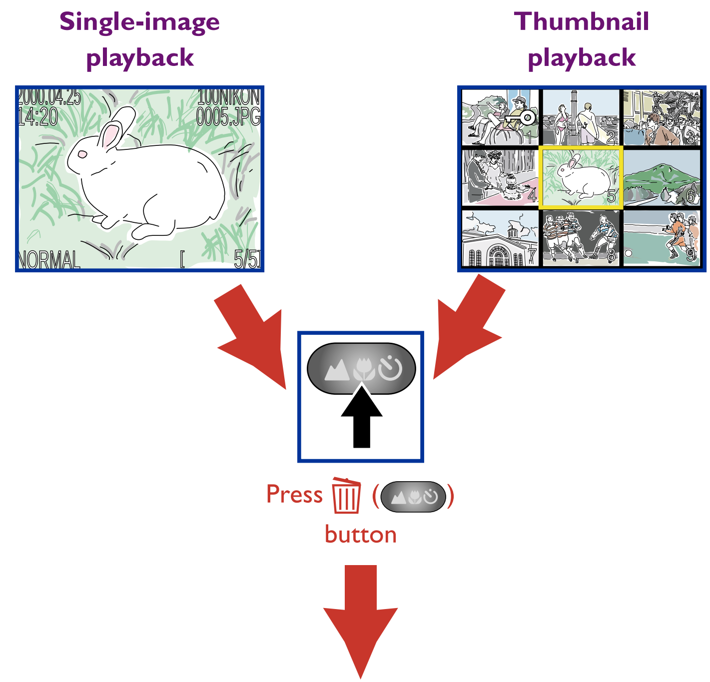
Single-image playback

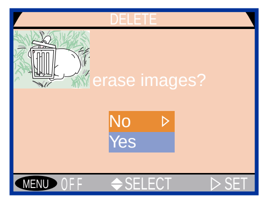
Button	Operation	Function
	Rotate	View additional information on current photo
	Press up or left to view earlier images, down or right to view later images	View other photographs in memory one at a time (hold down to scroll rapidly to desired frame number)
	Press	Zoom in on current photograph (use multi selector to view other areas of image)
	Press	Cancel zoom
	Press	Select current photo for deletion
	Press	Start or stop movie playback

Thumbnail playback

Button	Operation	Function
	Press	Press once to display menu of nine thumbnail images, twice to display four thumbnail images, a third time to return to single-image playback
	Rotate	Scroll through thumbnails page by page
	Press up, left, down, or right	Highlight thumbnail. Use ⊞ ( ) button to view highlighted thumbnail at full size.
	Press	Select highlighted thumbnail for deletion

Deleting photographs





Delete dialog displayed. Press multi selector up or down to highlight option, press to right to select.

- Select **Yes** to delete photograph
- Select **No** to save photograph and return to shooting mode

Basic Photography

This chapter covers operations that can be performed using the camera's dials and buttons in A-REC mode. A-REC mode is a simple, "point-and-shoot" mode in which the majority of settings are made automatically by the camera to produce the best results. The user controls the following settings directly by means of the camera's buttons and dials:

- optical and digital zoom
- flash settings
- focus-mode settings
- image quality and size
- exposure compensation

In addition, you can also perform the following operations in A-REC mode:

- focus lock
- delay shutter release using the self-timer
- review and delete photographs as they are taken

These topics are covered in the sections that follow.

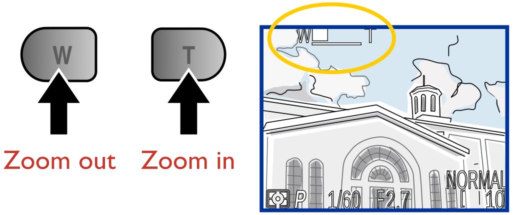
Click *to go*

Optical and Digital Zoom

The COOLPIX 990 is equipped with motor-driven, ×3 optical zoom linked to the viewfinder. By changing the area visible in the viewfinder (the "field of view"), zoom helps you establish the right balance between subject and background. A wide field of view is suitable for group portraits or landscapes, a narrow field of view for close-ups or long-range photography. *Digital zoom* can be used to further enlarge photographs electronically by up to ×4.0. Note that zooming in on a subject tends to decrease the amount of light entering the camera, resulting in slower shutter speeds, while simultaneously decreasing the apparent distance between the subject and the background. Zooming out has the opposite effect.

Optical Zoom

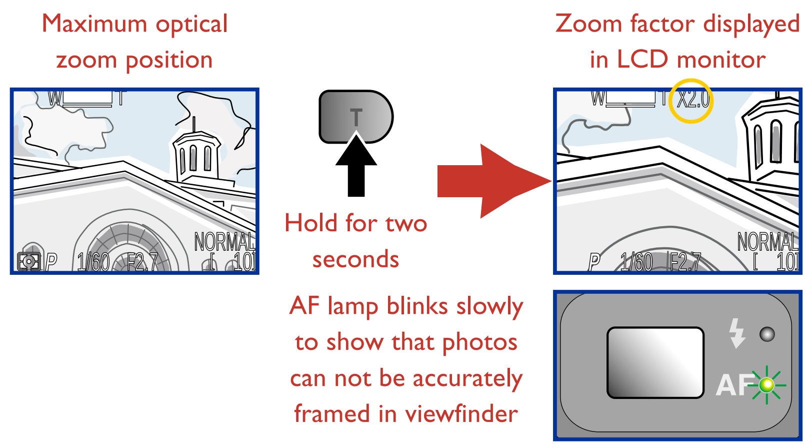
Photos can be framed in the viewfinder or LCD monitor using the zoom buttons.



Indicator in LCD monitor displays amount of zoom while either button is pressed

Digital Zoom

At the maximum optical zoom position, holding the T button down for two seconds triggers digital zoom.



While digital zoom is in effect, the zoom factor increases each time the T button is pressed, to a maximum of ×4.0. Pressing the W button decreases the zoom factor. To restore optical zoom, press the W button until the digital zoom indicator disappears.

Digital zoom

In digital zoom, image data from the CCD are processed digitally, enlarging the center portion of the image to fill the frame. Unlike optical zoom, digital zoom does not increase the amount of detail visible in the photograph. Instead, details visible at maximum zoom are enlarged, producing a slightly "grainy" image. Because only the center portion of the image appears in the final photograph, center-weighted metering is used, and the center focus area is automatically selected.

Digital zoom can not be used when **Black & White** is chosen in the M-REC IMAGE ADJUSTMENT sub-menu.

The effects of digital zoom are not visible in the viewfinder. Digital zoom is only available when the LCD monitor is on or the camera is connected to a television set.

For more information on:

Initial zoom position

Digital zoom settings

Zoom aperture

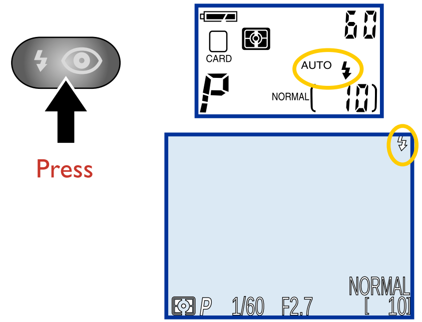
Metering

Focus area selection

Image adjustment

Using the Flash

The flash settings can be changed in A-REC and M-REC modes using the flash button.



Confirm flash setting in control panel or LCD monitor (setting not displayed in monitor when flash set to "auto")

The following flash settings are available:

Setting	How it works	When to use it
AUTO Auto	Flash fires when lighting is poor	Best for general use
Flash Cancel (off)	Flash will not fire even when lighting is poor	Use where flash is prohibited or to capture natural lighting under dim light (use of tripod advised when lighting is poor)

Setting	How it works	When to use it
AUTO Auto with red-eye reduction	Pre-flash lamp fires before main flash to minimize "red-eye" caused by flash reflecting from retina	Use for portraits (works best when subjects are well within range of flash and are looking directly at camera)
Anytime Flash (fill flash)	Flash fires whenever photo is taken	Use to "fill-in" (illuminate) back-lit subjects
SLOW Slow synchronized	Auto flash combined with low shutter speed	Use to capture both subject and background at night or under low light conditions

A short pause is required between exposures for the flash system to charge. While the flash is charging, the red flash lamp next to the viewfinder will blink when the shutter-release button is pressed halfway. Try again after briefly removing your finger from the shutter-release button.

When lighting is poor and the flash is set to "Off" or "Slow Sync" (SLOW), shutter speed slows and photos may be blurred. If possible, use a tripod when lighting is poor. At speeds of below $^1/_4$ s, the shutter speed indicator in the LCD monitor turns yellow. Noise may appear in photographs taken at speeds slower than this value.

The built-in flash will automatically be set to "Off" when:

- you use autofocus with a setting of "Infinity"
- you choose a multi-shot setting of **Continuous**, **Multi-shot 16, VGA Sequence**, or **Ultra HS** (an external flash can still be used with these settings)
- you choose a multi-shot setting of **Movie**
- you use best-shot selection (BSS)
- you use lens converter (LENS) settings
- the **AE Lock** option in the EXPOSURE OPTIONS sub-menu is on

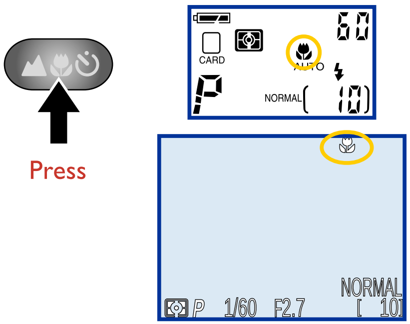
When using the flash, be sure the flash window is unobstructed.

For more information on:

Safe flash use
Focus mode
Multi-shot settings
Best-shot selection
Lens converter settings
Exposure options
Flash exposure level
Using an external flash

Focus

A-REC offers a choice of three autofocus settings, plus a self-timer mode. Focus mode can be set in A-REC or M-REC using the button.



Confirm focus-mode setting in control panel or LCD monitor

Macro close-up

When the camera is zoomed to the middle optical zoom position, macro close-up can be used with subjects as little as 2 cm (0.8 in) from the lens. At zoom positions suited to macro close-up, the macro close-up icon ( ) in the LCD monitor will turn yellow.

It is recommended that you frame photographs in the LCD monitor when using macro close-up.

While the flash can be used in macro close-up mode, it may sometimes be unable to light the entire subject. Take a test picture and verify the results in the LCD monitor.

Focus mode will cycle through the following settings:

Setting	How it works	When to use it
NO ICON Autofocus	Camera automatically adjusts focus according to distance to subject	Use with subject 30 cm (1 ft) or more from lens
Infinity	Focus is fixed at infinity. Flash is disabled.	Use for photographing distant scenes in daylight (a manual focus setting of “Inf” is available for when you want to use the flash)
Macro Close-up	Focus adjusted automatically for subjects 2 cm (0.8 in) or more from lens	Use for close-up photography
Self-timer	Shutter release delayed 10 s after shutter-release button is pressed (release delayed 3 s if pressed twice)	Use for self-portraits or to reduce camera shake. Focus mode set to (macro close-up), allowing photographs to be taken at ranges of 2 cm to infinity.

For more information on:

Manual focus
Using the self-timer

Autofocus Mode

At settings of "autofocus" or "macro close-up", the camera automatically focuses on the subject in the selected focus area when the shutter-release button is pressed halfway (in A-REC mode, the camera automatically focuses on the subject in the center focus area). The autofocus system operates in one of two modes:

AF Mode	How it works	Pros and cons
Continuous	Camera adjusts focus continuously	PRO Minimizes time required to focus CON Photos can be taken even when camera is not focused—check AF lamp before shooting
Single	Camera focuses when shutter-release button pressed halfway	PRO Photographs can only be taken when camera is in focus; saves batteries CON Slight delay before camera focuses

For more information on:

Autofocus mode (M-REC)

Focus area

In A-REC, autofocus mode is determined by whether the LCD monitor is on or off: continuous AF is used when the monitor is on, single AF when it is off. M-REC offers additional settings that give greater control over autofocus mode.

Getting good results with autofocus

Autofocus performs best when:

- There is contrast between the subject and the background. For example, autofocus may not perform well on subjects that are the same color as the background.
- The subject is evenly lit.

Autofocus does not perform well when:

- The focus area contains objects at different distances from the camera. For example, autofocus may not perform well when photographing an object inside a cage, as the bars of the cage will be closer to the camera than the main subject.
- The subject is very dark (the subject should not, however, be too much brighter than the background).
- The subject is moving rapidly.

If the camera is unable to focus using autofocus, use focus lock to focus on another subject at the same distance, or measure the distance to your subject and use manual focus. For more information, see:

"Focus lock" (following)

"Advanced Photography: Manual Focus"

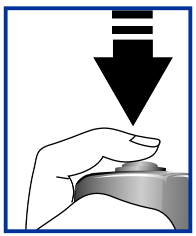
Focus Lock

In A-REC mode, the camera automatically focuses on the subject at the center of the frame. If your subject is not located at the center of the frame when the shutter-release button is pressed halfway, the camera will focus on the background. Focus lock allows you to first focus on your subject, then adjust the composition before taking the photograph.

1 Focus the camera

Position the subject in the center focus area (shown by the focus target in the viewfinder) and press the shutter-release button halfway.



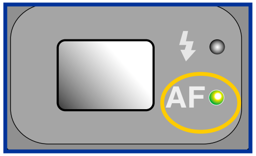


In M-REC mode, you can also use focus area selection to focus on an off-center subject. See:

"Advanced Photography: Focus Area Selection"

2 Check the AF lamp

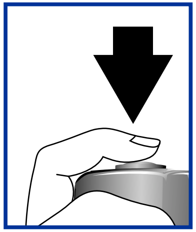
With the shutter-release button held halfway down, check that the green AF lamp next to the viewfinder glows steadily.



3 Recompose the photograph and shoot

Focus will remain locked as long as the shutter-release button is held halfway. Keeping the shutter-release button held halfway down, recompose your photograph. Press the shutter-release button the rest of the way down to shoot.





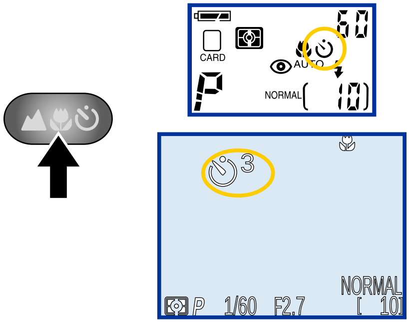
Do not change the distance between the camera and the subject while focus lock is in effect. If your subject moves, remove your finger from the shutter-release button and focus again at the new distance.

Using the Self-Timer

The COOLPIX 990 is equipped with an automatic timer with two settings: three seconds, useful for reducing camera shake, and ten seconds, ideal for self-portraits. To use the self-timer, follow these steps:

1 Mount the camera on a tripod (recommended) or rest it on a flat, stable surface.

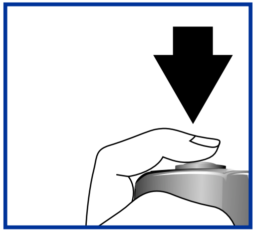
2 Press the button until the icon appears in the control panel or LCD monitor.



Count-down timer in LCD monitor shows number of seconds remaining to shutter release after shutter-release button fully pressed

3 Compose the photograph.

4 Fully depress the shutter-release button to activate the timer. Press the shutter-release button once for a ten-second delay. For a three-second delay, press the shutter-release button twice.



The red-eye reduction lamp next to the flash window will start to blink when the shutter-release button is pressed, and continue to blink until one second before the shutter is released. The red-eye reduction lamp will stay lit during the final second to warn that the shutter is about to be released.

To stop the automatic timer before a photograph is taken, turn the mode dial to a different setting. The timer will stop and the indicator will disappear from the control panel and LCD monitor.

Image Quality and Size

Image quality and size together determine the file size of photographs taken with the camera. This in turn determines how many photographs can be stored on a single memory card. The number of images that can be stored at different combinations of image quality and size is illustrated in the following tables:

Quality	Size: Full 8MB	Full 16MB	XGA 8MB	XGA 16MB	VGA 8MB	VGA 16MB	3 : 2 8MB	3 : 2 16MB
HI	0	1	—	—	—	—	0	1
FINE	5	10	19	40	48	100	5	11
NORMAL	10	20	38	79	91	187	11	23
BASIC	19	40	73	151	161	333	22	46

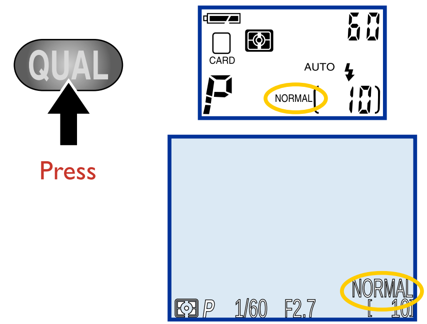
Number of images that can be stored on 8 MB and 16 MB memory cards

Quality	Size: Full	XGA	VGA	3 : 2
HI	10	—	—	11
FINE	61	239	588	69
NORMAL	121	466	1101	137
BASIC	239	885	1952	269

Number of images that can be stored on 96 MB memory card

Image Quality

To reduce memory requirements, images are compressed using JPEG compression, which can result in changes in image quality. Image quality is set using the QUAL button.



Press

Confirm image quality setting in control panel or LCD monitor

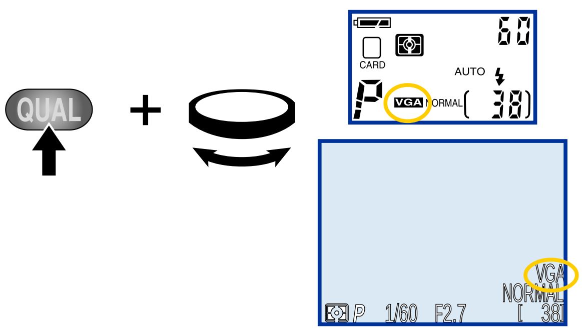
Image quality will cycle through the following settings:

Setting	File format	How it works
HI (M-REC only)	TIFF	No compression, maximum quality
FINE	JPEG	File size reduced to roughly 1/4 of original
NORMAL	JPEG	File size reduced to roughly 1/8 of original
BASIC	JPEG	File size reduced to roughly 1/16 of original

JPEG compression analyzes images in blocks 8 × 8 pixels in size, and selectively reduces detail within each block. At higher compression ratios, the block pattern becomes more visible and there may be noticeable loss of detail. The actual effect depends on the size of the image when output on a monitor or printer and on the type of subject. While a setting of NORMAL represents the best trade-off between memory and image quality in most cases, a setting of BASIC can be used to save memory. Settings of HI (M-REC only) or FINE are suitable for photographs that will be enlarged or printed at high resolution.

Image Size

Image size can be set by holding down the QUAL button while turning the command dial.



Confirm size setting in control panel or LCD monitor

The following options are available:

Setting	Size (pixels)	Notes
Full	2048 × 1536	—
XGA	1024 × 768	Not available at HI image quality
VGA	640 × 480	Not available at HI image quality
3 : 2	2048 × 1360	Same aspect ratio as 35 mm film. AF lamp blinks slowly to indicate that viewfinder can not be used to frame photo accurately. Use LCD monitor.

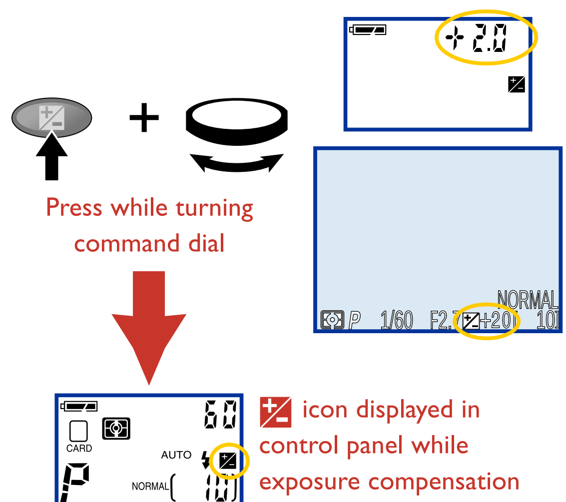
Image size determines the size at which an image can be reproduced on a printer or monitor. If the output size is too large, the individual pixels will be visible to the naked eye, giving the image a rough, uneven appearance. A typical target resolution for an ink-jet printer is about 200 pixels per inch. At this resolution, a VGA picture will be output at a size of 3.2 × 2.4 inches (8.1 × 6.1 cm), a full-size image at a size of about 10.2 × 7.7 inches (26.0 × 19.5 cm). Computer monitors typically have a resolution of about 100 pixels per inch.

JPEG compression (image quality) reduces file size, but has no effect on the number of pixels in the image or on the size of the image when output on a printer or monitor.

Exposure Compensation

To obtain the desired result with certain subject compositions, particularly those containing complex patterns of light and shade or areas of high contrast, it may be necessary to use exposure compensation to modify the exposure value suggested by the camera. Exposure compensation is available in both A-REC and M-REC.

Exposure compensation can be set to values between +2.0 EV (overexposure) and –2.0 EV (underexposure) in increments of $^{1}/_{3}$ EV.



Press while turning command dial

Confirm exposure value in control panel or LCD monitor. Results of exposure compensation visible in monitor; adjust compensation until desired result achieved.

icon displayed in control panel while exposure compensation is in effect

To cancel exposure compensation, set the compensation value to ±0.0 EV.

By default, exposure compensation returns to ±0.0 when the camera is turned off. In M-REC mode, the camera can be set to "remember" the compensation value in effect when the mode dial is turned off, restoring the value when the mode dial is next set to M-REC. For more information, see:

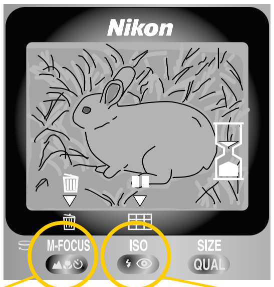
"Camera Setup: Customizing Camera Controls"

Exposure compensation can also be set using the EXPOSURE OPTIONS > **Exp. +/–** item in the M-REC menu. See:

"Advanced Photography: Camera Control"

Reviewing Photographs

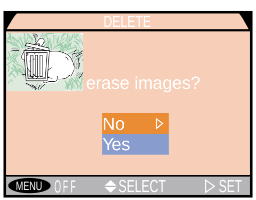
In A-REC mode, photographs are displayed in the LCD monitor after shooting (in M-REC, you can choose whether or not to display photographs after shooting using the **Monitor Options** > **Display Mode** item in the SET-UP menu). The review feature is not available when the monitor is off.



Photograph displayed in monitor after shooting

Press to delete photograph

Press to pause display for 20 s before recording



Delete dialog displayed

- Select **Yes** to delete photograph
- Select **No** to save photograph and return to shooting mode

While the display is paused, a **REC** icon appears in the LCD monitor. Press the button again to record the photograph and return to shooting mode, or press the button to delete the photograph as described above. The photograph will automatically be recorded if neither button is pressed before twenty seconds have passed.

For more information on:

M-REC review settings

Advanced Photography

This chapter covers settings available only when shooting in M-REC mode. In addition to the settings discussed in the previous chapter, in M-REC the user can use camera buttons and dials to control:

- focus area
- exposure mode
- focus distance (manual focus)
- sensitivity (ISO equivalency)

In addition, menu options give the user control over:

- white balance
- metering method
- frame advance rate
- best-shot selection
- contrast, brightness, and image type (color or black-and-white)
- image sharpening
- camera settings, including user settings and settings for exposure, autofocus, zoom, and flash
- settings for optional lens converters

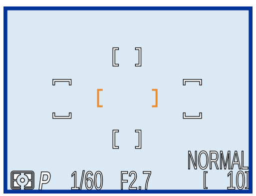
These topics are covered in the sections that follow.

Click to go

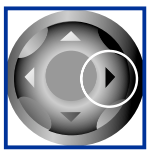
Focus Area Selection

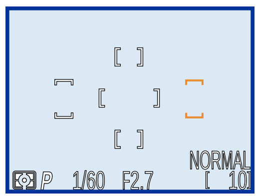
In M-REC, you can choose the focus target for autofocus operations from one of five focus areas. Focus area selection is useful when the subject is not positioned in the center of the frame. There are five focus areas: center, top, bottom, right, left.

To use focus area selection, the LCD monitor must be on and **Manual** selected in the **Focus Options** > **AF Area Mode** sub-menu of the M-REC shooting menu. The focus area can then be selected using the multi selector.



Center focus area selected





Use multi selector to select new focus area

For more information on:

- Focus options
- AF-area spot metering
- Focus lock
- Digital zoom

Focus area selection can be used in combination with AF-area spot metering to match spot metering to the selected focus area. It can also be used in combination with focus lock if the subject would not fall in any of the focus areas in the final composition.

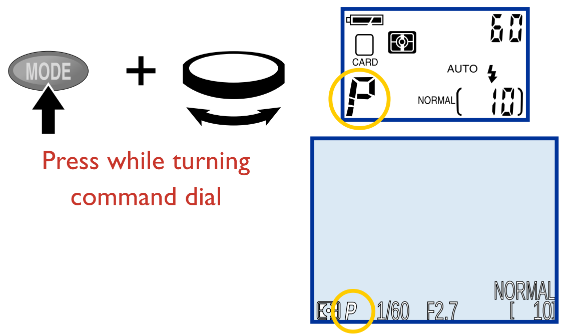
Manual focus selection is not available when the monitor is off or when digital zoom is in effect. In these cases, the center focus area (shown by the focus target in the viewfinder) is used for autofocus operations.

When **Auto** (the default setting) is selected in the **Focus Options** > **AF Area Mode** sub-menu for M-REC mode, the camera automatically selects the focus area containing the subject closest to the camera when the shutter-release button is pressed halfway. No focus area indicators appear in the LCD monitor until the shutter-release button is half-pressed, when the active focus area is shown in red. Focus area selection can also be deactivated by selecting **Off** in the **Focus Options** > **AF Area Mode** sub-menu, in which case the center focus area is used. For more information, see:

"Advanced Photography: Camera Control"

Exposure Mode

In M-REC, you can choose from four exposure modes that make it possible to manually adjust shutter speed and/or aperture and still achieve optimal exposures. To set the exposure mode:



Confirm mode setting in control panel or LCD monitor

The following modes are available:

Mode	How it works	When to use it
P Programmed auto	Camera sets shutter speed and aperture for best exposure. Flexible program can be used to select further combinations of shutter speed and aperture that yield equivalent exposure.	Best for general use and for snapshots
A Aperture-priority auto	User chooses aperture; camera sets shutter speed for best exposure	Large apertures (small f numbers) blur background details and increase range of flash; small apertures (large f numbers) increase depth of field, bringing both main subject and background into focus
S Shutter-priority auto	User chooses shutter speed; camera sets aperture for best exposure	High shutter speeds freeze motion; low shutter speeds suggest movement by blurring moving objects
M Manual	User chooses shutter speed and aperture	Use when you want complete control over exposure

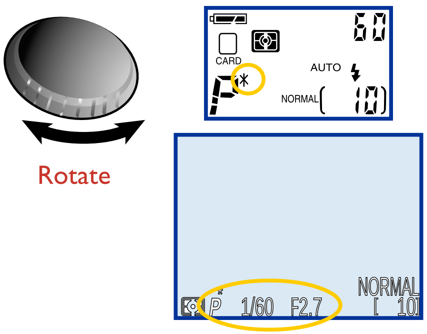
The term "exposure" refers to the amount of light allowed to enter the camera when a photograph is taken. The exposure depends on the aperture (the size of the opening through which light enters the camera) and shutter speed (the length of time that light enters the camera). The same exposure can be achieved using many different combinations of aperture and shutter speed. You can use flexible program to choose from one of several combinations, or set either aperture or shutter speed to suit your creative designs, while the camera takes care of the other to ensure correct exposure. Manual exposure mode gives you the freedom to modify exposure from the value suggested by the camera.

P Programmed Auto

In programmed auto, the camera automatically adjusts shutter speed and aperture to produce the best exposure. Adjustments to the exposure value selected by the camera can be made using exposure compensation or exposure bracketing.

Flexible Program

When programmed auto is in effect, different combinations of shutter speed and aperture can be selected using the command dial. Each combination of shutter speed and aperture will produce the same exposure.



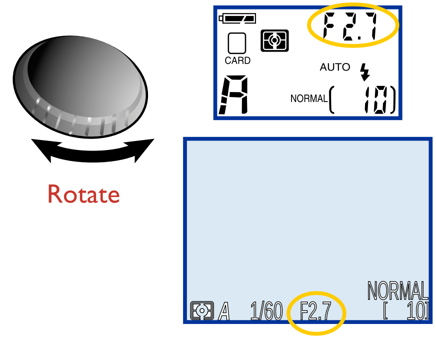
P* appears in control panel and LCD monitor to indicate that flexible program is in effect. When monitor is on, values for shutter speed and aperture are displayed in control panel and LCD monitor (values are not displayed in control panel when monitor is off).

Flexible program is reset to the default aperture and shutter speed when any of the following actions are performed:

- The camera is turned off
- The mode dial is turned to another setting
- Another exposure mode is chosen

A Aperture-Priority Auto

In aperture-priority auto, aperture can be chosen by rotating the command dial. Aperture can be set to values between maximum and minimum aperture in increments of $^1/_3$ of a step.



Aperture displayed in LCD monitor and control panel

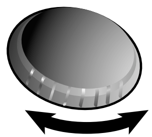
If the selected aperture value would result in the photograph being over- or under-exposed, the aperture value displayed in the control panel and LCD monitor will flash when the shutter-release button is pressed halfway. Choose another aperture setting and try again.

For more information on:

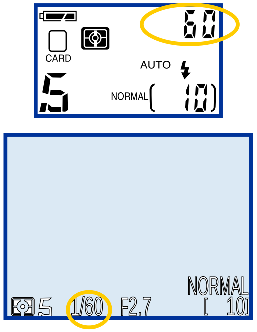
Exposure compensation
Exposure bracketing

S Shutter-Priority Auto

When the camera is set to shutter-priority auto, shutter speed can be chosen by rotating the command dial. Options range from 8 s to $^1/_{1000}$ s in increments of one step.



Rotate



Shutter speed displayed in LCD monitor and control panel (shutter speeds of $^1/_4$ s or more are shown in the LCD monitor in yellow to indicate that noise may appear in the final photograph)

If the selected shutter speed would result in the photograph being over- or under-exposed, the shutter speed displayed in the control panel and LCD monitor will flash when the shutter-release button is pressed halfway. Choose another setting and try again.

Shutter speed limitations

At a CONTINUOUS setting of **Ultra HS**, the lowest available shutter speed is $^1/_{30}$ s. At a setting of **Movie**, shutter speed can not be set to a value slower than $^1/_{15}$ s. A setting of **bulb** (manual exposure mode only) is only available at a CONTINUOUS setting of **Single**. For more information on CONTINUOUS settings, see:

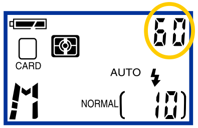
"Advanced Photography: Continuous Photography"

M Manual

In manual exposure mode, you can choose an aperture between maximum and minimum aperture (in increments of $^1/_3$ of a step), and a shutter speed of "bulb" or values between 8 s and $^1/_{1000}$ s (in increments of one step). Follow the steps below to set shutter-speed and aperture in manual exposure mode:

1 After setting the exposure mode to manual, release the MODE button.

2 Press the MODE button again to select either shutter speed or aperture in the control panel shutter-speed/aperture display, or in the LCD monitor, where the selected item is shown in green. The item selected changes each time the button is pressed.

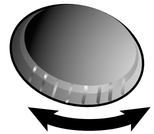


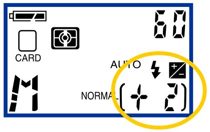
Long time exposure

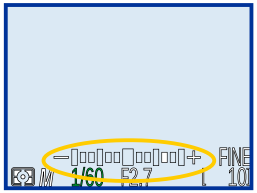
When the shutter-speed is set to **bulb** (manual exposure mode only), the shutter will remain open while the shutter-release button is pressed (maximum exposure 60 s). Use of the remote shutter-release cord MC-EU1 (available separately) and a tripod is recommended.

Note that if the shutter is open for longer than $^1/_4$ s at any setting, noise may appear in the final photograph.

3 Rotate the command dial to set the selected item (aperture or shutter speed) to the desired value. The amount the photograph will be over- or under-exposed at the selected setting is displayed in the control panel and LCD monitor.

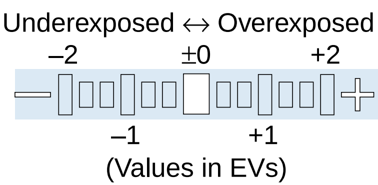






Control panel display is in EVs, rounded to nearest EV (display lasts for eight seconds after command dial is released, then is replaced by exposure count display). If photograph would be over- or under-exposed by more than 9 EV, display shows flashing +9 (overexposure) or –9 (underexposure).

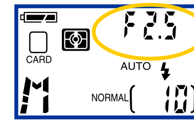
LCD monitor display shows values between –2 and +2 EV in increments of $^1/_3$ EV.



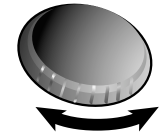
If sensitivity is set to **AUTO** when shutter-priority auto or manual exposure is used, sensitivity will be fixed at ISO 100 equivalent and will not vary with lighting conditions. This ensures that the desired exposure will be achieved. For more information on sensitivity settings, see:

"Advanced Photography: Sensitivity (ISO Equivalency)"

4 Press the MODE button to select the remaining item (aperture or shutter speed).



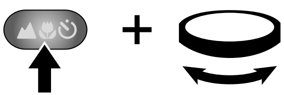
5 Rotate the command dial to choose a value that will produce the desired exposure, as shown in the control panel and LCD monitor (see Step 3, at left).



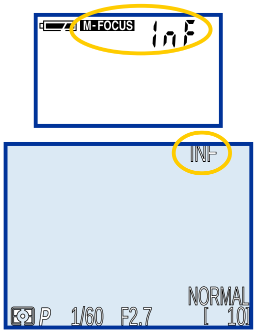
Manual Focus

In M-REC, focus distance can be selected from fifty preset distances ranging from 0.02 m (0.8 in) to infinity. Manual focus can be used when you know the distance to your subject in advance, or when the camera is unable to focus using autofocus.

To choose a distance for manual focus:



Press while turning command dial



Focus distance is displayed in LCD monitor, and in control panel while command dial is rotated. After command dial is released, M-FOCUS icon in control panel indicates that manual focus is in effect. Distances of 30 cm (12 in) or less are shown in red in monitor to indicate that camera may not be able to focus at some zoom settings.

The flash can be used while manual focus is in effect. This makes it possible to combine the flash with a manual focus setting of infinity.

The focus distances available depend on the zoom setting. The camera can focus at a distance of 2 cm at the middle optical zoom position only.

The value displayed for manual focus is the approximate distance from the front of the lens. The actual focus distance may differ slightly from the value shown; check focus in the LCD monitor before shooting.

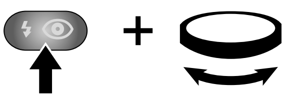
Manual focus can be cancelled by pressing the button.

The units used for manual focus distance can be chosen from the FOCUS OPTIONS > **Distance Units** sub-menu in the M-REC menu. See:

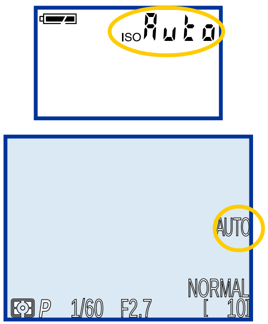
"Advanced Photography: Camera Control"

Sensitivity (ISO Equivalency)

In A-REC mode, automatic gain control is used to produce sensitivity equivalent to ISO 100 film. In M-REC mode, you can choose increased values for sensitivity, or allow the camera to set sensitivity in response to lighting conditions. Increasing sensitivity reduces the time needed to make an exposure, allowing increased shutter speed. This can be used to reduce blurring caused by camera motion when lighting is poor, or to "freeze" moving objects. Sensitivity is adjusted as shown below:



Press while turning command dial to cycle through sensitivity settings as follows: **100 ⇔ 200 ⇔ 400 ⇔ AUTO**



Sensitivity setting is displayed in LCD monitor, and in control panel while command dial is rotated. After command dial is released, ISO icon in control panel indicates that sensitivity adjustment is in effect.

A slight amount of noise may appear in photographs taken at settings other than **100**.

The following settings are available:

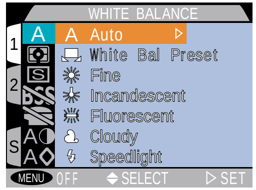
Setting	Description
100	Approximately equivalent to ISO 100 (default)
200	Approximately equivalent to ISO 200
400	Approximately equivalent to ISO 400
AUTO	Equivalent to **100** under normal conditions; when lighting is poor, however, camera will automatically raise sensitivity to compensate. ISO icon appears in control panel and LCD monitor only when sensitivity is raised above **100**.

Changes to sensitivity have no effect in A-REC mode. Turning the mode dial to A-REC returns sensitivity to the default value; the M-REC setting is restored when the mode dial is set to M-REC once again.

In a film camera, sensitivity is a characteristic of the film, not the camera. Sensitivity determines the amount of light needed to produce a given degree of exposure. The more sensitive the film, the less light needed to make an exposure, allowing higher shutter speeds. Higher sensitivity is achieved by altering the chemical composition of the film, causing a random pattern, called "grain," to appear in the final photograph. In a digital camera, sensitivity has a similar effect: higher sensitivities allow higher shutter speeds, at the expense of "noise" (the digital equivalent of film "grain") appearing in the final image.

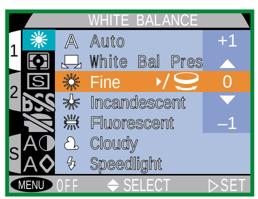
White Balance

MENU



The perceived color of an object is affected by the color of the lighting under which it is viewed. The human brain is able to detect and compensate for such changes in perceived color. As a result, a white object will look white to humans whether viewed in sunlight or under overcast skies, or indoors under incandescent or fluorescent lighting. A digital camera must emulate the human brain and adjust colors according to lighting so that colors that appear white when viewed directly also appear white in the final photograph. This adjustment is called "white balance," and can be made using the WHITE BALANCE sub-menu in the M-REC menu.

Fine-tuning white balance settings



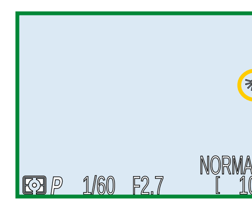
At settings other than **A** (auto) and (preset), white balance can be "fine-tuned" by highlighting the desired setting in the white-balance menu and rotating the command dial. Adjustments can be made in the range of +3 to –3 or, in the case of (fluorescent), by selecting the type of bulb from the following sub-menu:

FL1: W (default) **FL2**: N **FL3**: D

Raising white balance gives images a blue, "cold" cast; lowering white balance makes photos appear "warmer"—that is, slightly yellow or red. After selecting the desired white-balance adjustment, press the multi selector to the right to put your choice into effect.

The following white-balance settings are available:

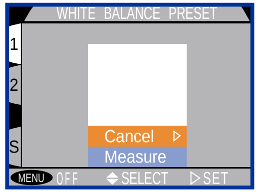
Setting	Description
A Auto	White balance automatically adjusted to suit lighting conditions. Best setting in most situations.
White Bal Preset	White object used as reference point to set white balance to suit unusual lighting conditions
Fine	White balance set for direct sunlight
Incandescent	Use when taking photographs indoors under incandescent light
Fluorescent	Use when taking photographs indoors under fluorescent light
Cloudy	Use when taking photographs under overcast skies
Speedlight	White balance set to match light produced by flash



At settings other than **A** (auto), the current white-balance setting is indicated by an icon in the LCD monitor.

Preset White Balance

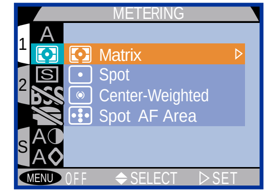
When (preset) is selected, the camera will zoom in and the preset white-balance menu will appear in the LCD monitor.



Option	Description
Cancel	Recalls most recent value for preset white balance from memory and sets white balance to this value
Measure	Camera measures white balance, using object displayed in center of LCD monitor as reference point. To use this option, first place white or light grey object under lighting that will be used in final photograph, then aim camera at object and press multi selector to right (beep will sound and camera will zoom out, but no photograph will be taken).

Metering

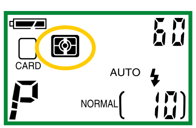
The COOLPIX 990 offers a choice of four metering methods. Choose a metering method according to your composition and lighting conditions.

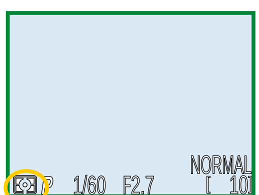


Method	How it works	When to use it
Matrix	Exposure calculated by comparing measurements from 256 segments of frame with library of typical compositions, producing best possible setting for entire frame	Best for general use
Spot	Camera measures light in area in center of frame occupying roughly $^1/_{32}$ of total, shown by square in center of LCD monitor	Ensures that subject in metering target will be correctly exposed even when background is very light or very dark. Can be used in combination with AE hold (see overleaf).

Method	How it works	When to use it
Center-Weighted	Camera measures lighting in entire frame, but assigns weight of 80% to area in center of frame occupying roughly $^1/_4$ of total	Classic meter for portraits; preserves background details while letting lighting conditions at center of frame determine exposure. Selected automatically when digital zoom is used. Can be used in combination with AE hold (see right).
Spot AF Area	Camera measures light in current focus area only	When **Auto** or **Manual** is chosen in FOCUS OPTIONS > **AF Area Mode** sub-menu, this option can be used to link spot metering to currently selected focus area. When **OFF** is chosen, this option is equivalent to "Matrix." When manual focus is in effect, this option is equivalent to "Spot."

The metering method is shown by icons in the control panel and LCD monitor (when **Spot AF Area** is chosen, a spot-metering icon ( ) appears in the control panel).





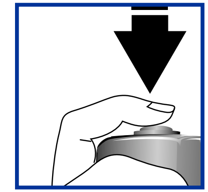
Auto-Exposure Hold

Pressing the shutter-release button halfway not only locks focus, but also exposure. This can be used together with spot or center-weighted metering to set exposure for a subject not at the center of the final composition.

1 Set metering to (spot) or (center-weighted).

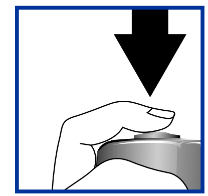
2 Position the subject in the center of the frame and press the shutter-release button halfway.





3 Keeping the shutter-release button held halfway down, recompose your photograph. Press the shutter-release button the rest of the way down to shoot.





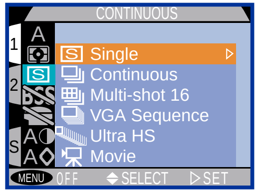
For more information on:

Digital zoom
Focus options
Focus area
Focus lock

Continuous Photography

MENU

Using the CONTINUOUS menu, you can set the camera to take photographs one at a time, shoot multiple photographs in sequence, or even record short movies.



Option	Description
Single	Camera records one photograph each time shutter-release button is fully pressed
Continuous	Camera records photographs in continuous sequence while shutter-release button is held down. Not available at HI image quality.

The built-in flash will not fire at settings of **Continuous**, **Multi-shot 16**, and **VGA Sequence**. Unless you are using an external flash, it is recommended that you set the flash to ("flash cancel") at these settings to ensure that photographs are not underexposed. At settings other than **Single** and **Movie**, the focus, exposure, and auto white-balance settings used for the first image are applied to all other images in the same series.

Settings of **Movie** and **Ultra HS** only take effect when the LCD monitor is on. If the monitor is turned off, the camera will revert to a setting of **Single** until the monitor is turned on. While **Movie** or **Ultra HS** is in effect, both built-in and external flashes will be automatically turned off. If the lens is rotated to point in the same direction as the LCD monitor at a setting of **Movie**, the display in the LCD monitor will be inverted and movies will be recorded upside down.

Option	Description
Multi-shot 16	Camera takes up to sixteen consecutive "thumbnail" images and combines them into collage. This option is only available when image size is set to "full."
VGA Sequence	Camera takes series of consecutive photographs 640 × 480 pixels in size. Image quality is set to NORMAL, allowing photos to be taken at approximately two frames per second.
Ultra HS	Camera takes eighty photographs 320 × 240 pixels in size (QVGA). Image quality is set to NORMAL, allowing photos to be taken at approximately thirty frames per second. Each sequence of photographs is saved in separate folder automatically created by camera. Folder name begins with "N_" followed by three-digit number assigned in ascending order by camera.
Movie	Camera begins recording movie when shutter-release button is fully pressed. Movie ends after forty seconds, or next time shutter-release button is fully pressed. Movie is stored in QuickTime format (DOS file extension ".MOV"). Each frame has image quality of NORMAL and is 320 × 240 pixels in size (QVGA).

For more information on:

Image quality and size

Flash settings

The following table shows the number of photographs (normal quality) that can be recorded in a single sequence at each setting, together with the approximate frame advance rate.

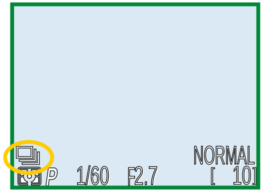
Mode	Approx. no. of frames per s	Max. no. of frames
Continuous (full size image)	1.5	5
VGA Sequence	2	44*
Ultra HS	30	80
Movie	15	600

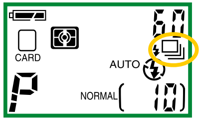
* When battery power is low, the maximum number of frames that can be taken in a single sequence is ten.

The camera is equipped with a memory buffer for temporary storage of photos during shooting. This allows you to take several photographs in succession, as you would with a traditional film camera, without waiting for the images to be transferred to the memory card. The number of images that can be stored in the buffer depends on the quality and size of the images. When the buffer becomes full, there will be a short pause while the camera transfers images to the card for permanent storage. The time required depends on the number of images in the buffer and the speed of the CompactFlash memory card.

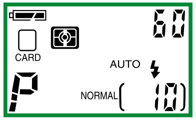
Do not remove the memory card from the camera while images are being transferred from the buffer to the card. Doing so could result in loss of data or in damage to the camera or the card. Be sure the camera is off before removing the memory card.

The CONTINUOUS setting is shown by icons in the control panel and LCD monitor.

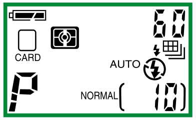




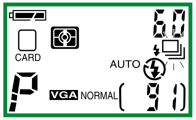
Continuous



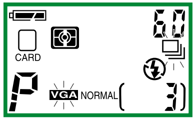
Single



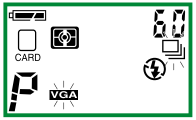
Multi-shot 16



VGA sequence



Ultra HS

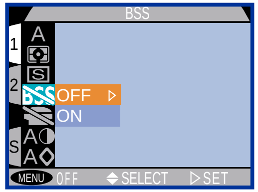


Movie

When the camera is connected to a video device at a video-mode setting of PAL and a continuous setting of **Ultra HS** or **Movie**, video output will be suspended while recording is in progress. Normal output will be restored when recording ends.

Best-Shot Selection

MENU



"Best-shot selection" (BSS) compensates for camera movement. It is most effective in situations in which inadvertent camera movement may affect the outcome of the photograph, for example when:

- the camera is zoomed in or you are using a teleconverter lens attachment
- you are using macro close-up
- shutter speed is low

BSS may not produce the desired results with a moving subject or if you change the composition during shooting.

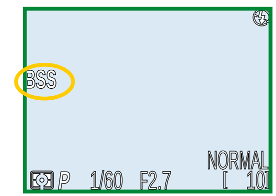
For more information on:

Zoom
Optional lens converters
Macro close-up
Flash settings
Continuous settings
Image quality

The options available in the BSS sub-menu are:

Option	Description
OFF	BSS off; one photo taken each time shutter-release button is fully pressed
ON	Camera shoots photos as long as shutter-release button is held down, to maximum of ten. These images are then compared and sharpest photo (photo with highest level of detail) saved to memory card.

When BSS is on, a BSS icon is displayed in the LCD monitor.



When photographs are taken with BSS on, the focus, exposure, and auto white-balance settings used for the first photo when the shutter-release button is pressed apply to all images in the series.

The flash is set to (flash-cancel icon) ("flash cancel") when BSS is on.

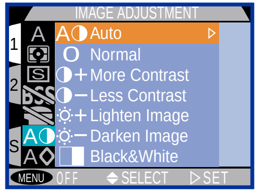
BSS is not available at:

- CONTINUOUS settings of **Continuous**, **Multi-shot 16**, **VGA Sequence**, **Ultra HS**, or **Movie**
- an image quality of HI

Selecting any of the above options automatically cancels BSS. BSS can not be selected while the above options are in effect.

Contrast, Brightness, and Image Type

MENU



When a photograph is taken, the COOLPIX 990 automatically performs image compensation to produce optimal brightness and contrast before the image is recorded to the memory card. The image adjustment sub-menu gives you control over the image compensation performed by the camera, making it possible not only to control brightness and contrast, but also to produce monochrome images. The following options are available:

Option	Description
A◑ **Auto**	Camera adjusts brightness and contrast for optimal results; adjustment performed differs from image to image
0 **Normal**	Camera performs same standard brightness and contrast adjustment on all images
◑+ **More Contrast**	Image processed to increase difference between light and dark areas
◑– **Less Contrast**	Image processed to reduce difference between light and dark areas
☼+ **Lighten Image**	Increases brightness of mid-tones in image. This setting can be used on images that will be output on computer monitor or printer if device tends to produce images that are too dark. Unlike exposure compensation, this adjustment does not result in loss of detail in highlights or shadows.
☼– **Darken Image**	Decreases brightness of mid-tones in image. This setting can be used on images that will be output on computer monitor or printer if device tends to produce images that are too bright. Unlike exposure compensation, this adjustment does not result in loss of detail in highlights or shadows.
◧ **Black & White**	Image converted to black-and-white. Black-and-white images require same amount of memory as color images, but show a higher level of detail. When this option is in effect, view through lens displayed in LCD monitor is in black-and-white. White-balance settings and digital zoom can not be used while this option is in effect.

Only one image adjustment setting can be used at a time. Selecting a new image adjustment option cancels the previous setting.

The effects of adjustments to brightness and contrast are not visible in the LCD monitor.

Exposure compensation (changing the aperture or shutter speed from the value suggested by the camera to increase or decrease exposure) tends to increase or decrease both contrast and brightness simultaneously. Image adjustment allows you to apply contrast and brightness separately for more creative flexibility.

At settings other than **Normal**, an image adjustment icon appears in the LCD monitor.

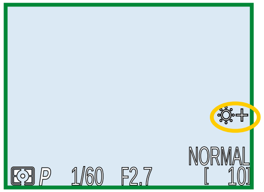
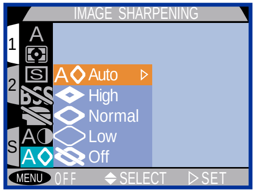


Image Sharpening



When a photograph is taken, the COOLPIX 990 automatically sharpens edges in the image before saving it to the memory card. The image sharpening sub-menu gives you control over the amount of sharpening performed. The following options are available:

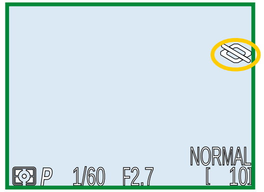
Option	Description
Auto	Camera adjusts edge sharpness for optimal results; adjustment performed differs from image to image
High	Image processed to increase sharpness, making edges more distinct
Normal	Camera performs same standard sharpening on all images
Low	Amount of sharpening reduced below normal level
Off	No sharpening performed

For more information on:

White balance

The effects of sharpening are not visible in the LCD monitor.

At settings other than **Normal**, an image adjustment icon appears in the LCD monitor.



Camera Control

MENU

The M-REC menu contains options that give the user greater control over camera settings, including:

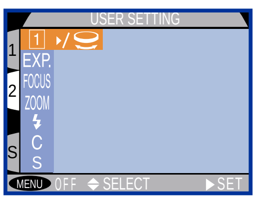
- a menu of three separate custom combinations of settings that can be edited and recalled as desired (custom settings)
- separate sub-menus for controlling auto exposure, autofocus, zoom, and flash settings
- a reset option that allows you to return settings to their default values

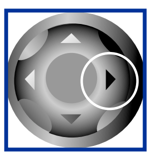
User Settings

In M-REC mode, the camera can "memorize" up to three combinations of settings, including white balance, metering, advance rate, best-shot selection, lens converter option, image adjustment, and sharpening. These settings can be recalled as desired, allowing you to create separate combinations of settings for different shooting conditions and recall them at a touch.

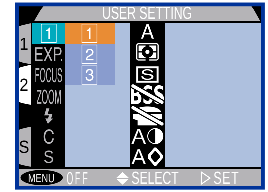
By default, any changes made to settings in M-REC mode are automatically saved as Settings Number 1. These settings are restored whenever the mode dial is set to M-REC. To view the contents of the current user set or select a new user settings number:

1 Highlight the current user settings number in the second page of the M-REC menu and press the multi selector to the right.



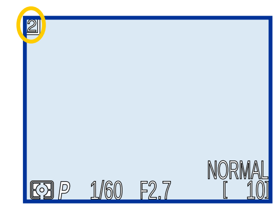


2 A menu of user settings numbers (1, 2, and 3) will be displayed. The current set will be highlighted, with the contents of the set listed to the right of the menu. Settings that have not been changed from defaults are shown in white, settings that differ from the defaults in orange.



3 To choose another set, highlight the desired number and press the multi selector to the right. You can also choose a set directly from the main menu by highlighting the user settings option and rotating the command dial.

Any changes to settings made in M-REC mode will be saved under the current settings number. When User Set 2 or 3 is selected, the user settings number appears in the LCD monitor.

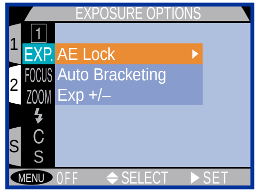


For more information on:

Default settings

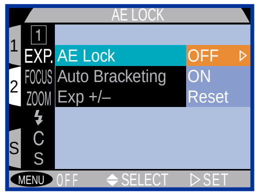
Exposure Options

The exposure options sub-menu provides control over the camera's auto-exposure function.



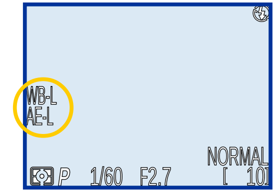
AE lock

Use this option when you want to use the same aperture, shutter-speed, sensitivity, and white-balance settings for all photographs in a series (for example, when taking photographs that will later be joined to form a panorama).



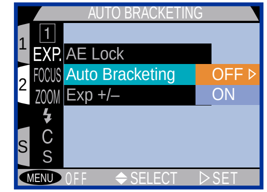
Option	Description
OFF	Restores normal exposure, sensitivity, and white balance.
ON	First photograph taken after **ON** is selected from AE-lock sub-menu sets exposure for all subsequent photographs. If white balance is set to **A** (auto), white balance for first photograph will also apply to other photographs in series. While AE lock is in effect, flash will be set to ⚡ ("flash cancel").
Reset	Clear existing exposure and white-balance settings. First photograph taken after this option selected sets exposure and auto white balance for all subsequent photographs.

While AE lock is in effect, AE-L and WB-L icons will appear in the LCD monitor.



Auto bracketing

Auto bracketing is used to vary exposure by fixed amounts over a series of photographs. This can be used to take multiple shots of the same subject at different exposure settings without stopping to adjust exposure compensation manually.



Option	Description
OFF	Restores normal auto exposure
ON	Exposure changes in order $+{}^{2}/_{3}$ EV, $+{}^{1}/_{3}$ EV, ±0 EV, $-{}^{1}/_{3}$ EV, $-{}^{2}/_{3}$ EV with each photograph taken after **ON** is selected (photographs with "+" value will be overexposed, those with "–" value underexposed; values are added to exposure-compensation setting made with ☒ button)

In programmed auto, aperture-priority auto, and manual exposure modes, bracketing is achieved by varying shutter speed. In shutter-priority auto, bracketing is achieved by varying aperture.

At settings of **Continuous** and **VGA Sequence**, shooting will pause after each series of five photographs has been taken.

When the flash is set to "Auto," the flash setting for the first photograph in each sequence of five photographs will apply to the remaining four. If the flash is used for the first photograph, it will be used for the next four photographs; if the flash is not used for the first photograph, it will not be used in the next four photographs.

If sensitivity is set to **AUTO**, the sensitivity used for the first photograph in each sequence of five photographs will apply to the remaining four.

Auto bracketing starts over from $+^{2}/_{3}$ EV when changes are made to any of the following:

- the flash setting
- sensitivity
- exposure compensation
- the **Variable Power** setting in the SPEEDLIGHT OPT sub-menu

Auto bracketing can not be used in combination with:

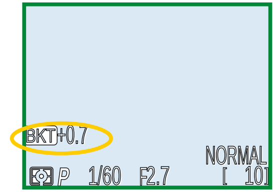
- CONTINUOUS settings of **Multi-shot 16**, **Ultra HS**, or **Movie**
- best-shot selection
- the **AE-Lock** option in the EXPOSURE OPTIONS sub-menu

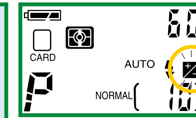
Choosing any of the above options cancels auto bracketing.

Auto bracketing can also be cancelled by:

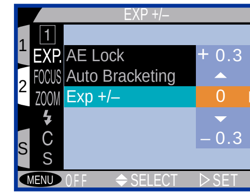
- selecting **OFF** from the **Auto Bracketing** sub-menu
- turning the camera off

While bracketing is in effect, the exposure modification appears with a BKT icon in the LCD monitor, and the icon in the control panel flashes.





Exp. +/– (exposure compensation)



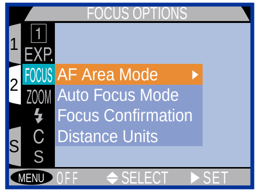
This option works in the same way as ordinary exposure compensation. Exposure compensation can be set to values between +2.0 EV (overexposure) and –2.0 EV (underexposure) in increments of $^{1}/_{3}$ EV. This item has the same effect as the button; changing exposure compensation in the **Exp. +/–** sub-menu changes the value selected with the button, while changing exposure compensation with the button changes the value displayed in the **Exp. +/–** sub-menu.

For more information on:

Multi-shot (continuous) settings
Flash settings
Sensitivity
Variable power (speedlight options)
Best-shot selection
AE lock (exposure options)
Exposure compensation

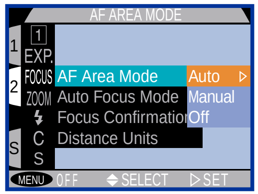
Focus Options

The focus options sub-menu provides control over focus settings.



AF area mode

This setting determines which of the five focus areas will be used for autofocus in M-REC mode. The following options are available when the LCD monitor is on (when the monitor is off, AF-area mode is automatically set to **Off**):

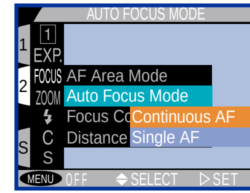


Option	Description
Auto	Camera automatically selects focus area containing subject closest to camera. Active focus area displayed in red when shutter-release button pressed halfway. This setting is useful when you have little time to compose photographs.
Manual	User selects focus area manually as described under "Advanced Photography: Focus Area Selection." This setting is useful when subject is not at center of final composition.

Option	Description
Off	Center focus area (shown by focus target in viewfinder) is used. No focus area indicators appear in LCD monitor. This setting can be used with focus lock.

Autofocus mode

In M-REC, you can choose the autofocus mode used when the LCD monitor is on (when the LCD monitor is off, single autofocus is used, regardless of the setting in the autofocus mode sub-menu).



Option	Description
Continuous AF	Camera adjusts focus continuously; focus is locked when shutter-release button is pressed halfway
Single AF	Camera focuses when shutter-release button is pressed halfway; focus is locked as long as shutter-release button is held in this position

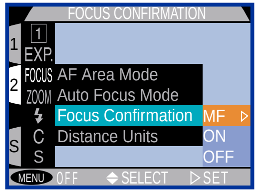
For more information on:

Focus area selection

Autofocus

Focus confirmation

Focus confirmation makes it possible to determine in advance exactly what areas of the frame will be in focus in the final photograph.

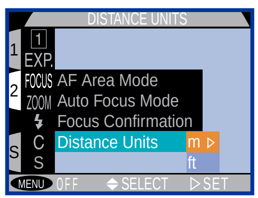


Option	Description
MF (Manual focus)	When manual focus is used, objects that are in focus will be sharply outlined in LCD monitor*
ON	Objects that are in focus will be sharply outlined in LCD monitor in all focus modes*
OFF	No indication of focus is given

* No indication of focus appears in the final photograph.

Distance units

In this sub-menu, you can choose the units used to display the manual focus distance. The options available are meters (m) and feet (ft).



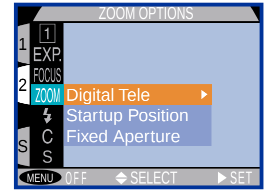
For more information on:

Focus mode

Manual focus

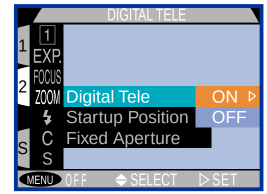
Zoom Options

The zoom options sub-menu controls settings for optical and digital zoom.



Digital zoom

This sub-menu can be used to turn digital zoom off and on.



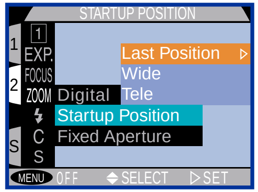
Option	Description
ON	Camera automatically enters digital zoom mode when T button is held down for more than two seconds at maximum optical zoom position
OFF	Only optical zoom available; digital zoom can not be used

For more information on:

Digital and optical zoom

Start-up position

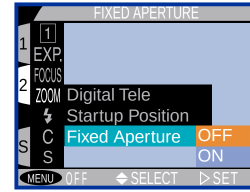
The options in this sub-menu determine the position of the zoom lens when the mode dial is turned from OFF to A-REC or M-REC.



Option	Description
Last Position	When turned on, camera zooms to same zoom position camera was in when turned off
Wide	When turned on, camera zooms out to widest angle
Tele	When turned on, camera zooms in to position just before maximum optical zoom position. Use this setting to minimize start-up time.

Fixed aperture

Normally, aperture changes with zoom position. In studio flash situations, this requires that flash power be adjusted with each change in zoom. Fixing aperture makes this adjustment unnecessary (not available at a setting of **Movie**).



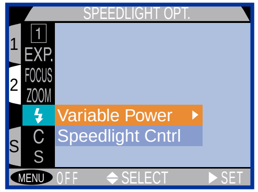
Option	Description
OFF	Lens f-number changes as camera is zoomed in or out
ON	Camera maintains aperture at value within $^1/_3$ EV of f number in effect before zoom operation started, if possible. Value changes if f number would not fall in range of values possible at given zoom setting. This setting only takes effect at exposure-mode settings of aperture-priority auto or manual, when user sets aperture manually.

For more information on:

Exposure mode

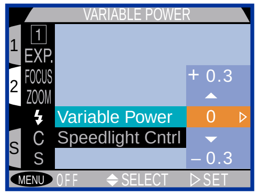
Speedlight (Flash) Options

This sub-menu controls settings for the camera's built-in flash and for external Speedlights.



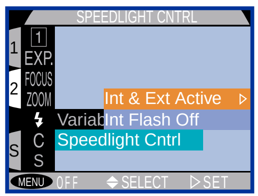
Variable power

This sub-menu is used to perform exposure compensation by varying the intensity of the flash. Exposure can be adjusted by from +2.0 EV to –2.0 EV in increments of $^1/_3$ EV.



Speedlight control

This sub-menu allows you to turn the camera's built-in flash off while using an external Speedlight.



Option	Description
Int and ext active	Built-in flash fires at same time as external Speedlight
Int flash off	Built-in flash set to (“flash cancel”); external Speedlight can still be used

Using an external flash

A flash bracket (the SK-E900 Multi-Flash Bracket Unit) is available separately for connecting external flash units to the COOLPIX 990. When the bracket is connected to the camera's synchro-flash terminal, external flash units mounted on the bracket are synchronized with the camera's built-in flash, increasing the size of the area illuminated and allowing use of sophisticated flash techniques such as bounce-flash photography. You can use flash settings such as “Auto,” “Slow Sync,” and “Anytime Flash” with both the external and built-in (internal) flash units, or you can turn the built-in flash off and use the external flash only (see left). When the flash is fired, the brightness of the external and built-in flash units is controlled by the camera.

Instructions for attaching the optional SK-E900 flash bracket and connecting external flash units may be found in the SK-E900 instruction manual. When the SK-E900 is in place, the following Nikon flash units (available separately) can be used: SB-28DX, SB-28, SB-26, SB-25, SB-24, SB-22S, and SB-22. The use of non-Nikon flash units is not recommended.

When the built-in flash is off, flash settings are shown in the control panel and LCD monitor flash-mode displays as follows (the icon indicates that the built-in flash is off):

Control Panel

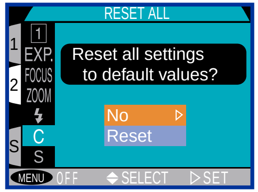
Mode	Display	Mode	Display
Auto	AUTO	Anytime Flash	
Flash Cancel		Slow Sync	SLOW
Red-Eye Reduction	AUTO		

LCD Monitor

Mode	Display	Mode	Display
Auto	A	Anytime Flash	
Flash Cancel		Slow Sync	SL
Red-Eye Reduction			

Restoring Default Settings

Selecting **C** (reset all) from the M-REC menu displays the message shown at right.



Option	Description
No	Return to shooting mode leaving settings unchanged
Reset	Restore the settings listed below to default values

Selecting **Reset** restores the following settings to their default values:

Setting	Default	Setting	Default
White Balance	Auto	AE Lock	Off
Metering	Matrix	Auto Bracketing	Off
Continuous	Single	Exp. +/–	±0
BSS	Off	AF Area Mode	Auto
Lens	Normal	Auto-Focus Mode	Continuous AF
Image Adjustment	Auto	Focus Confirmation	MF
Image Sharpening	Auto		

Setting	Default	Setting	Default
Digital Tele	On	Shutter Sound	On
Startup Position	Last Position	Memorize	All options on
Fixed Aperture	Off	Auto Off	30 s
Variable Power	±0	Shot Confirm Lamp	Off
Speedlight Cntrl	Int & Ext Active	Frame Intvl (Slide Show)	3 s
Folder	NIKON		
Display Mode	On		
Brightness	3		
Hue	6		

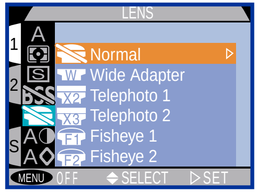
Settings in the User Set currently selected in the M-REC USER SETTINGS sub-menu will be restored to the above defaults. All other settings are unaffected.

For more information on:

User settings

Settings for Optional Lens Converters

MENU

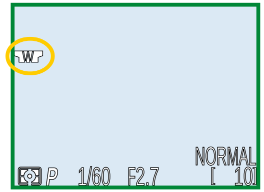


Lens converters for wide-angle, telephoto, and fisheye photography are available separately for the COOLPIX 990. Each of these converters is adapted to a particular combination of settings, including focus mode, zoom position, and metering method. Using the lens sub-menu, you can select combinations of settings suited to particular lens converters. The following options are available:

Option	Description
Normal	No modifications are made to settings. Use this option when no lens converter is attached.
Wide Adapter (for WC-E24 and WC-E63 wide-angle converters)	• Camera zoomed out to widest angle • Built-in flash and any external flash attachments disabled
Telefoto1 (for TC-E2 ×2 telephoto converter)	• Camera zoomed in to maximum optical zoom position • Optical zoom adjustable between maximum position (24 mm) and third step in LCD monitor zoom display (14 mm) • Built-in flash and any external flash attachments disabled
Telefoto2 (for TC-E3ED ×3 telephoto converter)	• Camera zoomed in to maximum optical zoom position • Optical zoom adjustable between maximum position (24 mm) and second step in LCD monitor zoom display (18 mm) • Built-in flash and any external flash attachments disabled
Fisheye1 (for FC-E8 fisheye converter)	• Zoom fixed at widest angle • Focus mode fixed at infinity • Metering method fixed at center-weighted • Built-in flash and any external flash attachments disabled • Four corners of frame blacked out to create circular frame
Fisheye2 (for FC-E8 fisheye converter)	• Zoom fixed at widest angle • Focus mode fixed at infinity • Built-in flash and any external flash attachments disabled • Image fills entire frame

For details of use and handling, refer to the documentation provided with your lens converter.

At settings other than **Normal**, a lens adapter icon is displayed in the LCD monitor.



For more information on:

Zoom
Flash settings
Focus mode
Metering

Playback

This chapter covers the operations that can be performed when the mode dial is set to PLAY. These include:

- playback of photographs stored on the memory card, either singly or in "contact sheets" of nine or four thumbnail images
- display of detailed photo information for individual photographs
- zooming in on images to view fine details
- movie playback
- deleting individual photographs

The above operations can be performed using the (mode), (flash), QUAL and zoom buttons, the multi selector, and the command dial. In addition, the following operations can be performed from the playback menu:

- deleting multiple photographs
- "slide shows," or automated sequential display of the photographs stored in memory
- protecting photographs from deletion
- hiding photographs
- preparing photographs for printing using the Digital Print-Order Format (DPOF)

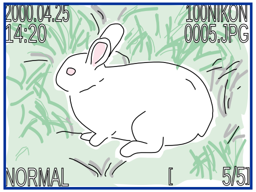
These topics are covered in the sections that follow.

Click to go

Basic Playback

When the mode dial is turned to PLAY, the camera enters playback mode with the most recent photograph displayed in the LCD monitor.





This section covers the operations that can be performed in playback mode using camera buttons and dials.

Only photographs in the current folder are displayed in playback mode. If there are no photographs in the current folder, the message "CARD CONTAINS NO IMAGE DATA" will be displayed. To select another folder for playback, or to view photographs in all folders, use the "Folders" item in the playback menu. For more information, see:

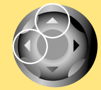
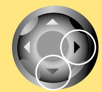
"Playback: Selecting a Folder for Playback"

In single-image playback, photographs are displayed briefly at low resolution while being read from memory. This makes it possible to scroll rapidly through the photographs in memory without waiting for each image to be displayed at full resolution.

Single-Image Playback

Selecting a photograph

Use the multi selector to page through the photographs in memory one at a time.

Operation	Function
 Press up or left	View photograph recorded before current photograph
 Press down or right	View photograph recorded after current photograph

To scroll quickly to a particular frame number without viewing intervening photos, press and hold the multi selector in one of the four directions. The photograph displayed will not change, but the frame number at the bottom right corner of the LCD monitor will increase or decrease rapidly. Release the selector when the desired frame number is reached.

The first and last photographs in memory are linked. Pressing the multi selector up or to the left while the first photo in memory is displayed takes you to the last photo. Pressing the multi selector down or to the right while the last photo in memory is selected takes you to the first photo.

Viewing photo information

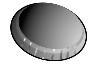
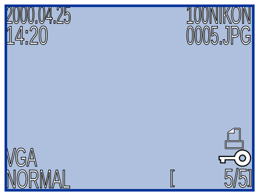


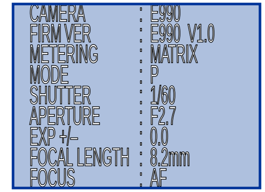
Photo information is shown superimposed on photographs displayed in single-image playback. There are five pages of photo information in total. Rotate the command dial to cycle through photo information as follows: Page 1 ⇔ Page 2 ⇔ Page 3 ⇔ Page 4 ⇔ Page 5 ⇔ Page 1.

Page 1



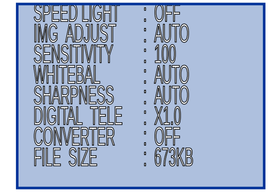
Date of recording
Time of recording
Image size
Image quality
Folder
File no. and type
Print-order icon
Protect icon
Frame no./Total no. of frames visible

Page 2



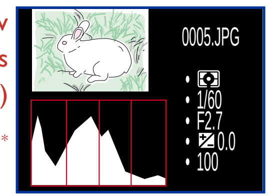
Camera type, firmware version, metering method, exposure mode, shutter speed, aperture, exposure compensation, focal length, focus mode/distance

Page 3



Flash on/off, image adjustment, sensitivity, white balance, sharpening, digital zoom, lens converter on/off, file size (kilobytes)

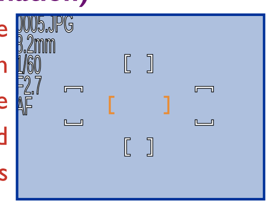
Page 4 (histogram)



Thumbnail preview (flashing border marks image highlights)
Histogram*
File no. and type
Metering method
Shutter speed
Aperture
Exposure compensation
Sensitivity (ISO equivalency)

* Histogram shows distribution of tones in image. Horizontal axis gives pixel brightness (dark → bright), vertical axis gives number of pixels.

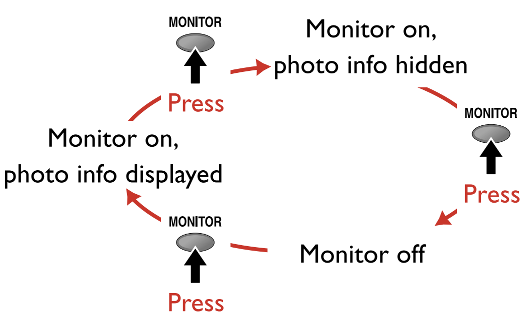
Page 5 (focus confirmation)



File no. and type
Focal length
Aperture
Shutter speed
Focus mode/focus distance
Focus confirmation (portions of image in focus sharply outlined; active focus area shown in red)

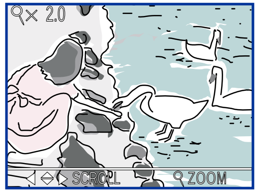
The MONITOR button

The monitor button controls the LCD monitor. Press the button to cycle through monitor settings as shown below.



Zoom

Use the ( ) button to zoom in on photographs displayed in single-image playback.

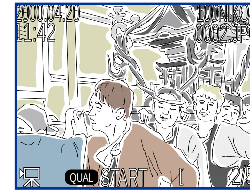


Operation	Function
Press	Zoom photograph in. Zoom increases each time button is pressed, to maximum of × 4.0. When image zoomed in, indicator appears and zoom factor is shown in LCD monitor.
Press	Cancel zoom
Press up, down, left, or right	Scroll to another area of image

To use the multi selector to view other photographs memory, first cancel zoom by pressing the button.

Movie playback

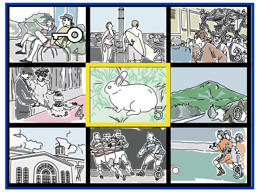
In single-image playback, movies are indicated by a icon. Movie playback is controlled by the QUAL button.

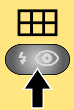
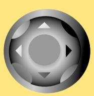


Operation	Function
Press	Start movie. While movie is in progress, press to pause movie; press again to resume
Press up or left	While movie is in progress, end playback and display previous picture. While movie is paused, go back one frame
Press right or down	While movie is in progress, end playback and display next picture. While movie is paused, go forward one frame

Thumbnail Playback ⊞ (⚡👁)

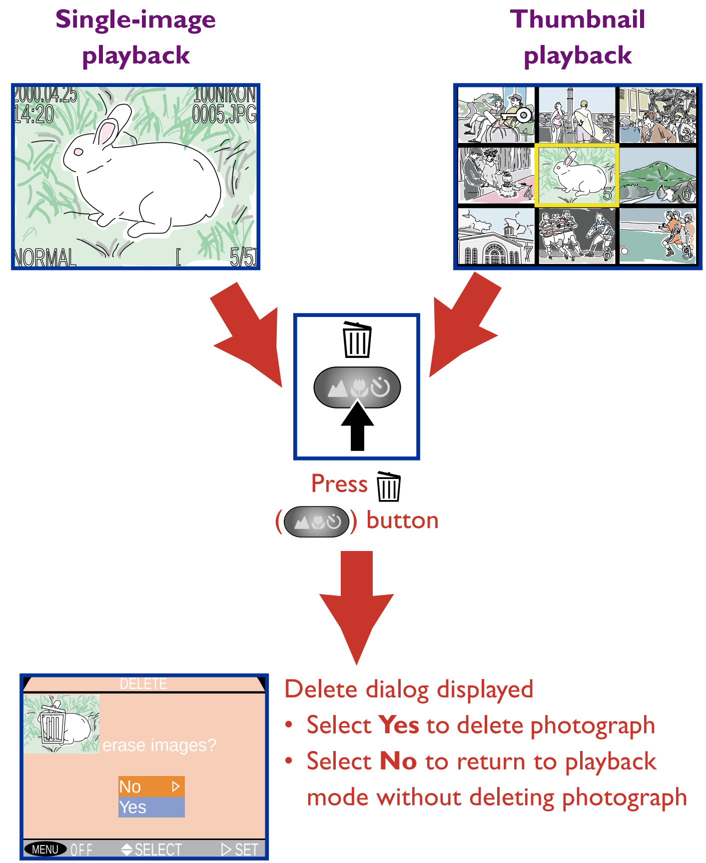
The thumbnail menu can be used to select photographs or movies for viewing.



Operation	Function
 Press	Press once to display menu of nine thumbnail images, or twice to display four thumbnail images. Press again to view highlighted thumbnail full size.
 Rotate	Scroll through thumbnails page by page (first and last page of thumbnails linked)
 Press up, left down, or right	Highlight thumbnail (press up/left when first thumbnail highlighted to view last page of thumbnails, down/right when last thumbnail highlighted to display first page of thumbnails).
 Press	Select highlighted thumbnail for deletion

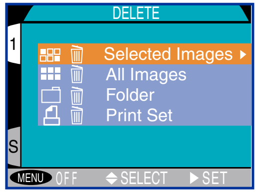
Deleting Individual Photographs 🗑 (▲🌷⏲)

To delete the image or movie currently on display in single-image playback, or to delete the currently selected thumbnail, press the 🗑 (▲🌷⏲) button.



Deleting Multiple Photographs

Using the **Delete** option in the playback menu, you can:

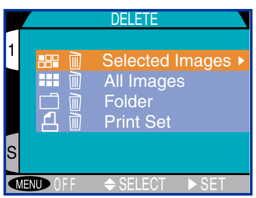


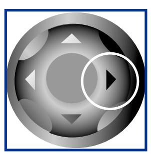
- delete selected photographs
- delete all photographs
- delete folders
- delete print-order files created with the **Print Set** option (see "Preparing Photographs for Printing," below)

Note that once deleted, photographs can not be recovered. Be sure to back up any photographs you want to keep.

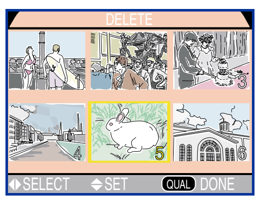
Deleting Selected Photographs

To delete selected photographs, highlight **Selected Image** in the **Delete** sub-menu and press the multi selector to the right. A menu of thumbnail images will be displayed.





Press right

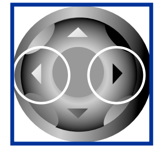


Photos hidden with the **Hide Image** option are not displayed in the thumbnail menu and can not be deleted.

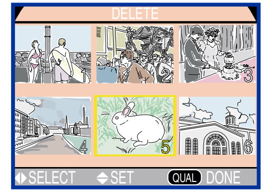
Thumbnails marked with a icon are protected and can not be selected for deletion.

To select images for deletion:

1

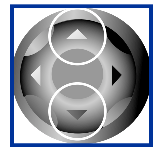


Highlight thumbnail

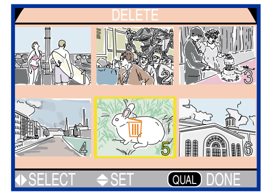


Press multi selector left or right to highlight desired thumbnail. To view more thumbnails, rotate command dial.

2



Press up or down

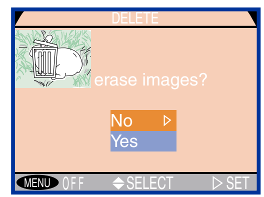


Press multi selector up or down to select image for deletion (selected images marked by icon). Repeat steps 1 and 2 to select more images. To deselect thumbnail, highlight and press multi selector up or down.

3



Press



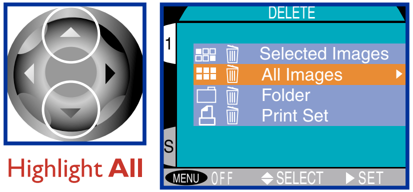
Confirmation dialog displayed.

- Select **Yes** to delete all selected images
- Select **No** to return to playback menu without deleting images

Deleting All Photographs

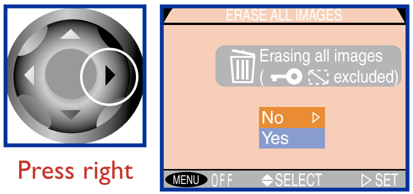
To delete all photographs on the memory catd:

1



Highlight **All Images**

2



Press right

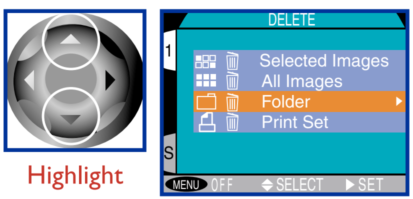
Confirmation dialog displayed

- Select **Yes** to delete all images (images that are hidden or protected will not be deleted)
- Select **No** to return to playback menu without deleting images

Deleting Folders

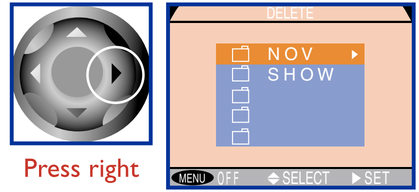
To delete a folder and all images it contains:

1



Highlight **Folder**

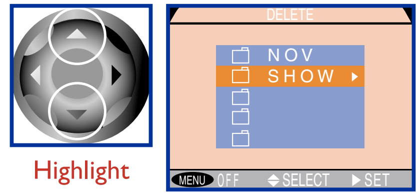
2



Press right

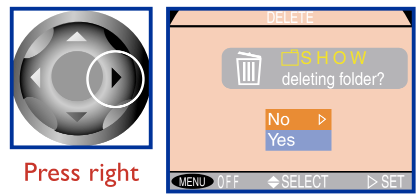
List of folders displayed (folder NIKON is not available for deletion)

3



Highlight folder name

4



Press right

Confirmation dialog displayed

- Select **Yes** to delete selected folder
- Select **No** to return to playback menu without deleting folder

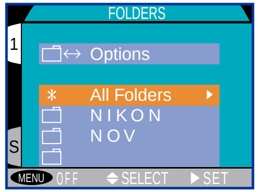
If the selected folder contains hidden or protected images, the folder will not be deleted. Any images it contains that are neither hidden nor protected will, however, be deleted.

Photos taken at a setting of **Ultra HS** are stored in folders with names of the form "N_" followed by a three-digit number assigned automatically by the camera. As each series of photographs is stored in a separate folder, the **Delete** > **Folder** item can be used to delete all photographs in a series at once.

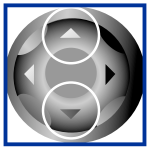
Selecting a Folder for Playback

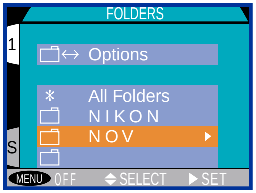
MENU

The **Folders** item in the playback menu can be used to select for playback images in all folders, or images in a specific folder.



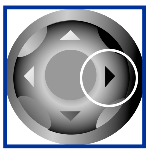
1



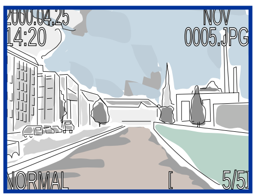


Highlight folder name. To view images in all folders, select **All Folders**

2



Press right



Most recent photograph in selected folder displayed.

Photos taken at a setting of **Ultra HS** are stored in folders with names of the form "N_" followed by a three-digit number assigned automatically by the camera. Photographs taken at this setting can be viewed by selecting the appropriate folder from the **Folders** menu.

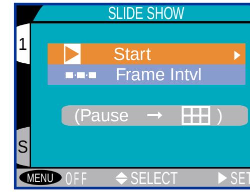
For more information on:

Folder options

Slide Show

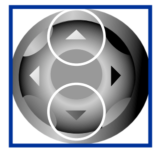
MENU

The slide-show option in the playback menu allows unattended sequential playback. All images in the current folder that have not been hidden using **Hide Image** will be played back one after the other, with a pause between each image.

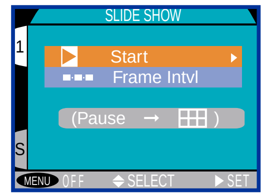


Starting a Slide Show

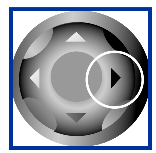
1



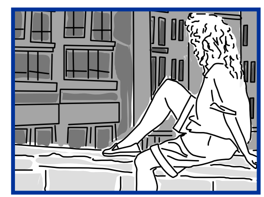
Highlight **Start**



2



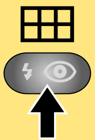
Press right



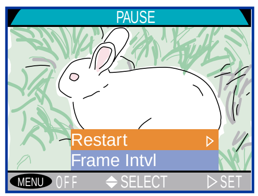
Photographs displayed one by one in order recorded, starting from oldest photo. Photos hidden using **Hide Image** option will not be displayed.

Any movies in the slide show will be played back as still images showing the movie's first frame.

The following operations can be performed while a slide show is in progress:

Operation	Function
 Press	Pause slide show
 Press	End slide show and return to single-image playback

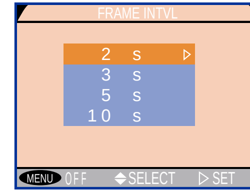
Restarting a Slide Show



After the slide show comes to an end, or while the slide show is paused, the dialog shown at right will be displayed. Select **Restart** to restart, or **Frame Intvl** to change the length of time each image is displayed. Press the MENU button to end the slide show and return to single-image playback.

The LCD monitor will turn off automatically if no operations are performed for thirty minutes while a slide show is in progress.

Changing the Display Interval



When **Frame Intvl** is selected from the slide-show sub-menu or from the pause screen, the menu of interval settings shown at right is displayed. To change the length of time each image is displayed, highlight the desired setting and press the selector to the right.

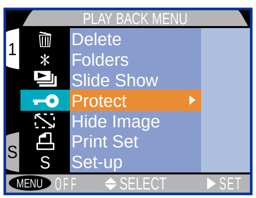
Owing to differences in the speed at which images can be read from the memory card, depending on the file size of the images in the slide show, the actual interval may differ from the value chosen in the interval menu.

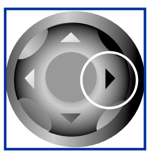
Protecting Photographs from Deletion

MENU

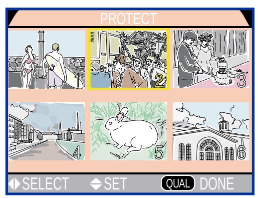
The **Protect** option in the playback menu can be used to protect images from deletion. Protected files can not be deleted in single-image playback or from the **Delete** sub-menu, and have "read-only" status when viewed from a computer. Note that protected files will be deleted when the memory card is formatted.

To change the protect status of photographs in the current folder, highlight **Protect** in the playback menu and press the multi selector to the right to display a menu of thumbnail images.



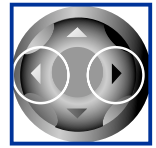


Press right

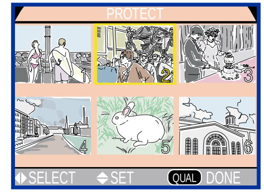


Select the desired images from the thumbnail menu.

1

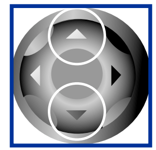


Highlight thumbnail

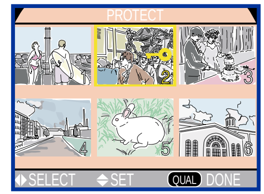


Press multi selector left or right to highlight desired thumbnail. To view more thumbnails, rotate command dial.

2



Press up or down

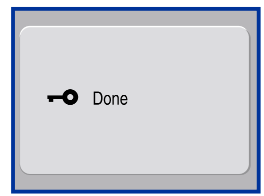


Press multi selector up or down to select image for protection (protected images marked by icon). Repeat steps 1 and 2 to select more images. To deselect thumbnail, highlight and press multi selector up or down.

3



Press



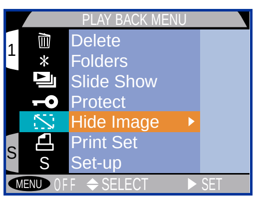
To complete operation, press QUAL button

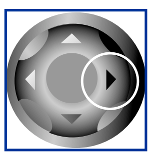
Hiding Photographs During Playback

MENU

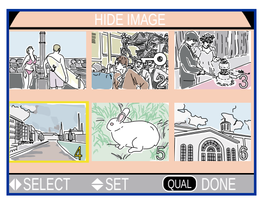
When creating a slide show or playing back photographs for an audience, you may want to use the **Hide Image** option to hide some of the photographs in the current folder. Once hidden, images are only visible in the **Hide Image** menu. They can not be deleted in single image playback or from the **Delete** sub-menu, and are treated as hidden files when the contents of the memory card are viewed from a computer.

To change the hidden status of photographs in the current folder, highlight **Hide Image** in the playback menu and press the multi selector to the right to display a menu of thumbnail images.



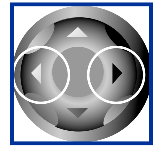


Press right

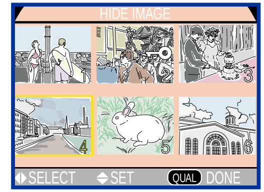


Select the desired images from the thumbnail menu.

1

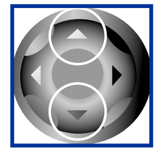


Highlight thumbnail

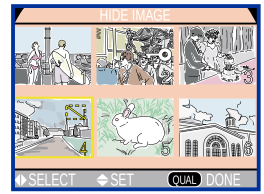


Press multi selector left or right to highlight desired thumbnail. To view more thumbnails, rotate command dial.

2

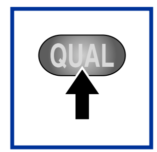


Press

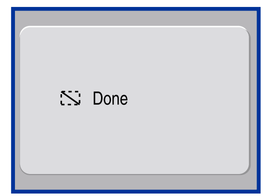


Press multi selector up or down to select image to be hidden (hidden images marked by icon). Repeat steps 1 and 2 to select more images. To deselect thumbnail, highlight and press multi selector up or down.

3



Press



To complete operation, press QUAL button

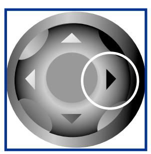
Preparing Photographs for Printing

MENU

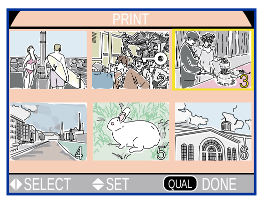
The **Print Set** option in the playback menu can be used to create digital "print orders" that specify the photographs to be printed, the number of prints, and the information included with each print. This information is stored on the memory card in Digital Print Order Format (DPOF). The card can then be removed from the camera and inserted in a DPOF-compatible device—whether your personal photo printer or a photofinisher's print system—and the selected images printed directly from the card.

To select images for printing, highlight **Print Set** in the playback menu and press the multi selector to the right to display a menu of thumbnail images.





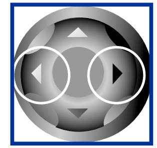
Press right



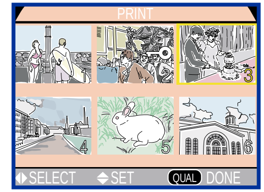
To delete print-order files when they are no longer needed, select **Print Set** from the **Delete** sub-menu.

Select the desired images from the thumbnail menu.

1

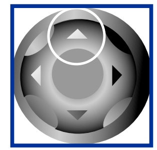


Highlight thumbnail

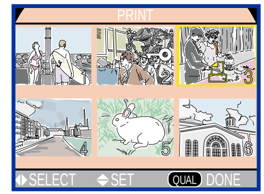


Press multi selector left or right to highlight desired thumbnail. To view more thumbnails, rotate command dial.

2

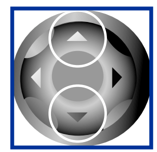


Press up

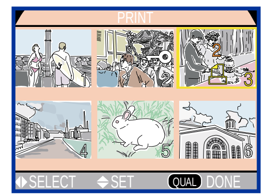


Images selected for printing are marked by 🖨 icon

3



Press up or down

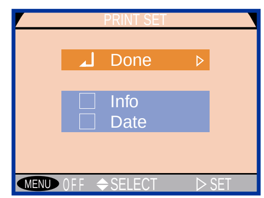


Use multi selector to change number of prints. Press up to increase (max. 9), down to decrease (to deselect, press down when number of prints is 1). Repeat steps 1–3 to select more images.

4



Press



Menu of print set options displayed. To turn option on or off, highlight and press multi selector to right. Check **Date** to print date of recording on photo, **Info** to print shutter speed and aperture. Highlight **Done** and press multi selector to right to return to playback.

Camera Setup

This chapter details the options available in the setup menus for A-REC, M-REC, and PLAY. The setup menus are where you make changes to basic camera settings, and perform such tasks as formatting memory cards. For an overview of the options available in the setup menus, see "Accessing Setup Options," below.

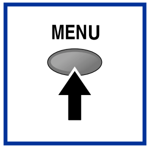
Click *to go*

Accessing Setup Options

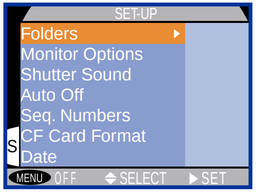
Accessing the Setup Menus

A-REC

1

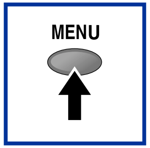


Press

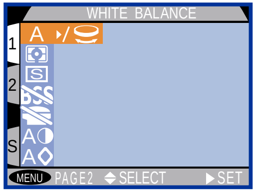


M-REC, PLAY

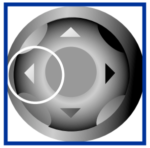
1



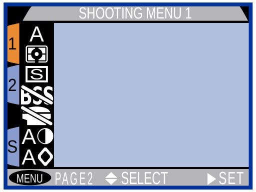
Press



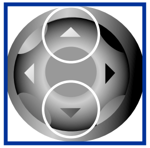
2



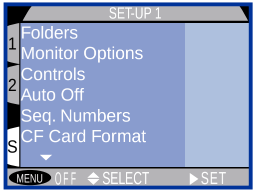
Press



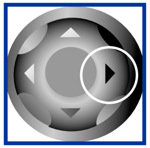
3



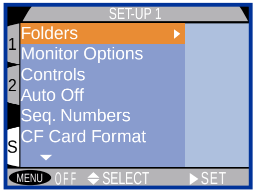
Highlight **S**



4



Press



Setup Menu Options

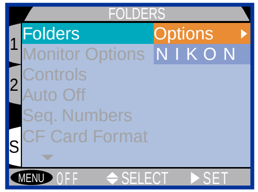
The options available in the setup menu depend on the operating mode.

Option	Mode			Description
	A-REC	M-REC	PLAY	
Folders	✔	✔	—*	Select folder used to store images; create, rename, and delete folders
Monitor Options	✔	✔	✔	Turn preview and review functions on or off; adjust monitor brightness and hue
Shutter Sound	✔	✔	✔	Control "beep" sound made by camera
Controls	—	✔	—	Choose function assigned to MODE and [exposure compensation] buttons in M-REC mode; control what M-REC settings are memorized when camera is turned off
Auto Off	✔	✔	✔	Set length of time before monitor turns off automatically
Seq. Numbers	✔	✔	—	File-naming options for A-REC and M-REC
CF Card Format	✔	✔	✔	Format memory cards for use in COOLPIX 990
Shot Confirm Lamp	—	✔	—	Determine whether red-eye reduction lamp fires to confirm shutter release
Date	✔	✔	✔	Set date and time
Video Mode	—	✔	✔	Choose between NTSC and PAL standards for video output
Language	—	✔	✔	Choose language for menus and messages

* "Folders" option for playback mode accessible from main playback menu

Using Folders

MENU



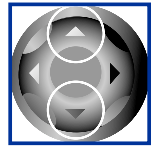
By default, photographs taken with the COOLPIX 990 are stored on the memory card in a folder labeled NIKON. To make it easier to locate photographs during playback, you can create additional folders and organize photographs by theme. The **Folders** option can be used to select the folder in which subsequent photographs will be stored, or to choose the folder from which photographs are played back. It also contains options for creating, renaming, and deleting folders.

The camera file system conforms to the Design Rule for Camera File Systems (DCF). Under this system, folder names consist of a three-digit folder number followed by the folder name (for example, "100NIKON"). Each folder can hold a maximum of 999 images (it may hold less, depending on the size of the memory card and other factors). Should a folder fill up, another folder will automatically be created with the same name but a different folder number (e.g., "101NIKON"). For most purposes, the folder number can be ignored—when viewed from the camera, folders with the same name but different folder numbers are the same folder. For example, the folders "100NIKON" and "101NIKON" are shown as a single folder ("NIKON") with no folder number. Such folders will however appear as separate folders when the memory card is viewed on a computer (see the Nikon View 3 *Reference Manual* for details). If you have trouble locating a photo on a computer, you can play it back on the camera, where the full folder number and name are displayed in the photo information.

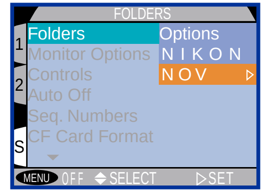
Selecting a Folder

To select the folder that will be used for playback or to store subsequent photographs in A-REC and M-REC:

1

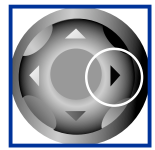


Highlight folder name

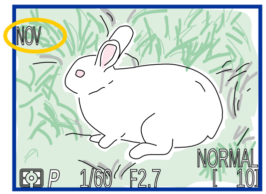


Note: "NOV" is user-created folder included for illustrative purposes. For information on creating folders, see: "Folder Options" (following)

2



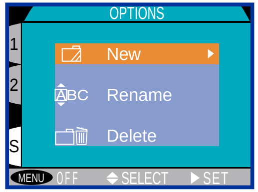
Press



Folder name displayed in LCD monitor (folder "NIKON" not displayed)

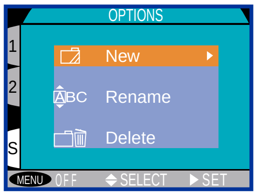
Folder Options

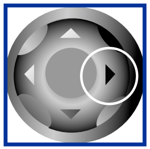
The folder options menu can be used to create, rename, or delete folders.



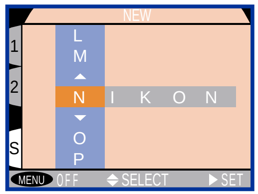
Creating new folders

To create a new folder, highlight **New** in the folder options menu and press the multi selector to the right.



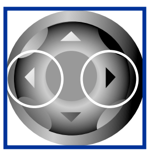


Press

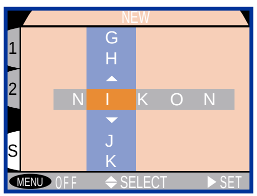


Name and register the new folder.

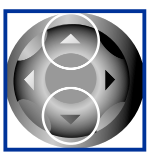
1



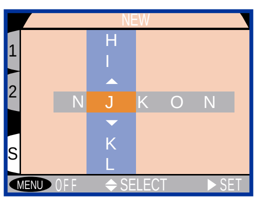
Highlight letter



2

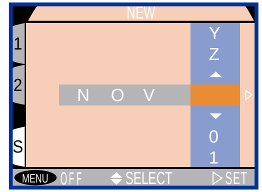


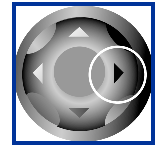
Edit letter



Folder name can include uppercase letters ("A"–"Z"), numbers, and spaces. Repeat steps 1 and 2 to create new five-letter folder name.

3





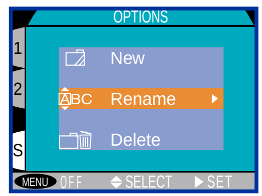
Press

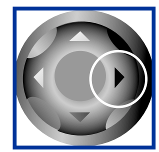
Highlight last letter and press multi selector to right to register new folder and exit menu. Press MENU button to exit without creating new folder.

Until another folder is selected from the FOLDERS menu, all subsequent photographs will be stored in the new folder.

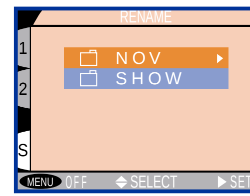
Renaming folders

To rename an existing folder, highlight **Rename** in the folder options menu and press the multi selector to the right. A list of user-created folders will appear.

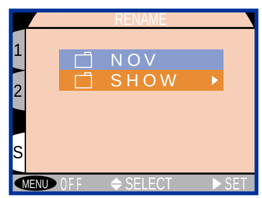


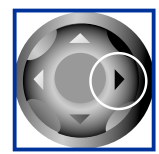


Press

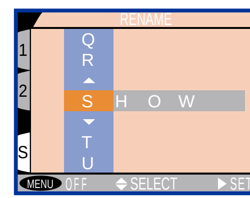


Highlight the folder you want to rename and press the multi selector to the right.





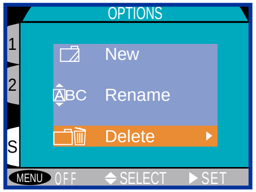
Press

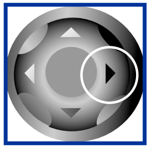


Rename the folder as described in steps 1–3 of "Creating new folders," above.

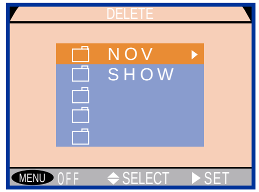
Deleting folders

To delete an existing folder, highlight **Delete** in the folder options menu and press the multi selector to the right. A list of user-created folders will appear.



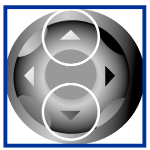


Press

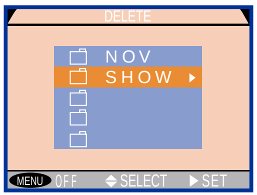


Select a folder for deletion.

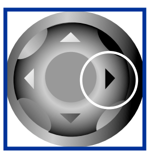
1



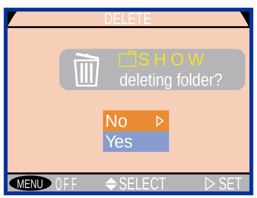
Highlight folder name



2



Press



Confirmation dialog appears

- Select **Yes** to delete folder
- Select **No** to return to previous menu without deleting folder

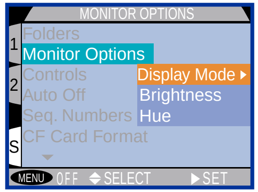
If the selected folder contains hidden or protected images, the folder will not be deleted. Any images it contains that are neither hidden nor protected will, however, be deleted.

Photos taken at a setting of **Ultra HS** are stored in folders with names of the form "N_" followed by a three-digit number assigned automatically by the camera. As each series of photographs is stored in a separate folder, the **Folder Options** > **Delete** item can be used to delete all photographs in a series at once.

Monitor Options

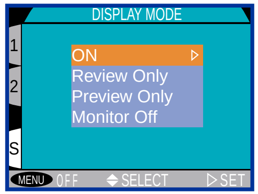
MENU

The **Monitor Options** item in the setup menu controls the review function and monitor brightness and hue (tone).



Display Mode (M-REC Only)

This option controls the review function and determines when the LCD monitor comes on automatically in M-REC mode.



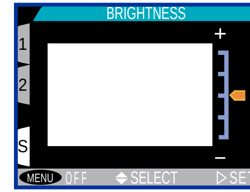
Option	Description
ON	LCD monitor comes on when camera is turned on; photographs are displayed in LCD monitor after shooting
Review Only	LCD monitor only comes on to display photographs immediately after shooting
Preview Only	LCD monitor comes on when camera is turned on, but photographs are not displayed in LCD monitor after shooting
Monitor Off	LCD monitor remains off when camera is turned on; photographs are not displayed in monitor after shooting

For more information on:

Display mode and battery life

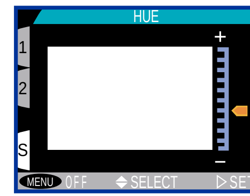
Brightness

This option controls the brightness of the LCD monitor. Use the multi selector to increase or decrease brightness by moving the arrow at the right side of the display up or down. When you have adjusted brightness to your satisfaction, press the multi selector to the right to put the change into effect. Changes made in one operating mode (A-REC, M-REC, or PLAY) apply simultaneously to the other two.



Hue

This option controls the hue (tone) of the LCD monitor. Use the multi selector to change monitor hue by moving the arrow at the right side of the display up or down. When you have adjusted settings to your satisfaction, press the multi selector to the right to put the change into effect. Changes made in one operating mode (A-REC, M-REC, or PLAY) apply simultaneously to the other two.

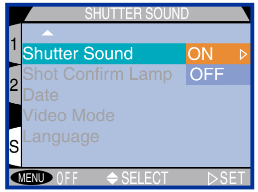


Increasing LCD brightness also increases the brightness of images output on a television set when the camera is connected to a television or VCR. Under normal viewing conditions, this may make the image on the television appear slightly too bright, or "washed out."

Sound Settings

MENU

The **Shutter Sound** sub-menu controls the "beep" made by the camera's speaker.

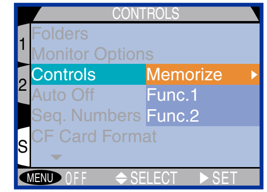


Option	Description
ON	Camera beeps once to confirm that: • mode dial has been turned to A-REC or M-REC from OFF or PLAY • picture has been taken • memory card has been inserted in camera • lens converter or manual focus modes have been selected • delete, hide, or protect operations have been completed • **ON** has been chosen from **Shutter Sound** sub-menu Camera beeps twice to warn that: • camera not in focus when shutter-release button pressed halfway (single AF only with LCD monitor off) • memory card full or not inserted • battery exhausted
OFF	Camera speaker off

Customizing Camera Controls

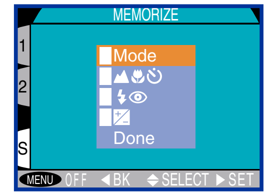
MENU

The options in the **Controls** sub-menu determine what M-REC settings are cleared when the camera is turned off, and what functions are assigned to the MODE (FUNC. 1) and (FUNC. 2) buttons in M-REC mode.



Memorize

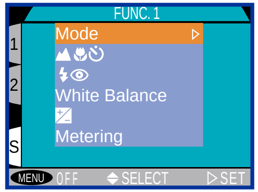
The **Memorize** menu determines what M-REC settings remain in effect when the camera is turned off. If an item is checked in this menu, the setting in effect at the time the camera is turned off is restored the next time the mode dial is turned to M-REC.



Option	Setting memorized
Mode	Exposure mode
	Focus mode
	Flash setting
	Exposure compensation value

To check an item, or to remove a check mark from an item, highlight the item and press the multi selector to the right. Highlight **Done** and press the multi selector to the right to put the changes into effect.

Function Buttons



By default, the MODE (FUNC.1) controls exposure mode, the (FUNC. 2) button exposure compensation. Using the **FUNC 1** and **FUNC 2** menus, you can assign different functions to these buttons in M-REC mode. For example, assigning white balance or metering to either button makes it possible to adjust these settings without using the menus. Alternatively, you can assign the functions of the or buttons to the FUNC. 1 or FUNC. 2 buttons, putting these functions where they can be easily adjusted.

The following functions can be assigned to either button:

Option	Function Assigned
Mode	Exposure mode
	Focus mode/manual focus (functions in same way as button)
	Flash setting/sensitivity (functions in same way as button)
White Balance	White balance (press while turning command dial to select white-balance program; while button is pressed, **W-BAL** indicator and white-balance program are displayed in control panel shutter-speed/aperture display as follows: **Pre** = Preset [restores last recorded preset white value], **Sun** = Fine, **Inc** = Incandescent, **Flu** = Fluorescent, **Clo** = Cloudy, **Fla** = Flash, no display = Auto)
	Exposure compensation
Metering	Metering method (press while turning command dial to select metering method)

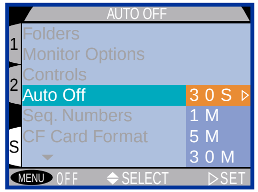
For more information on:

Exposure mode
Focus
Flash settings
Sensitivity
White balance
Exposure compensation
Metering
Exposure options

Exposure mode can not be used unless **Mode** is assigned to one of the two buttons. If neither button is assigned the exposure compensation function, exposure compensation can only be adjusted using the **Exp. +/–** item in the M-REC EXPOSURE OPTIONS sub-menu.

Auto Off

MENU



When operated on battery power, the camera enters sleep mode if no operations are performed for thirty seconds (three minutes when menus are displayed). The time limit for sleep mode can be chosen from the **Auto Off** menu.

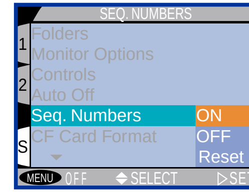
The time limit for playback is independent of the time limit for A-REC and M-REC, and is set by choosing **Auto Off** from the playback setup menu. The time limit for A-REC and M-REC can be set by choosing **Auto Off** from either of the A-REC or M-REC setup menus.

In sleep mode, all camera functions are deactivated and the camera itself is effectively off, consuming almost no power. The camera can be reactivated by pressing the MONITOR button or by pressing the shutter-release button halfway.

While the camera is being powered by the AC adapter (available separately), the camera will remain on for thirty minutes if no operations are performed, regardless of the setting in the **Auto Off** menu. If the camera is connected to a television set, the television display will remain on indefinitely after the LCD monitor has turned off.

File Numbering

MENU



Photographs taken with the COOLPIX 990 are stored as image files. Each file is assigned a name consisting of "DSCN" plus a four-digit number assigned automatically by the camera. Although no two photographs in a single folder will have the same file name, photographs in different folders may share the same name, causing confusion when the files are copied to a computer. This can be prevented using the options in the **Seq. Numbers** sub-menu.

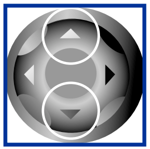
Option	Description
ON	When new folder is created, numbering will continue from last number used. All files will have unique names.
OFF	When new folder is created, numbering will begin from 0001. Files in different folders may have same name.
Reset	Resets sequential numbering to lowest number available on card

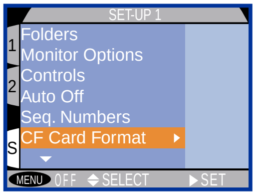
Formatting Memory Cards

MENU

Memory cards can be formatted using the **CF Card Format** option in the setup menu for each mode. To format a memory card:

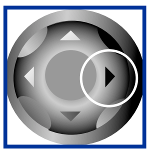
1



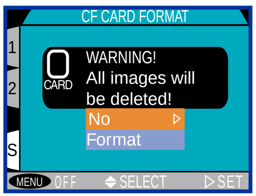


Highlight **CF Card Format**

2

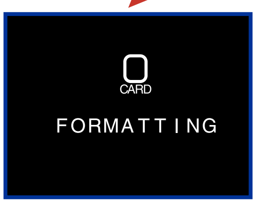


Press



Confirmation dialog displayed. Select **Format** or **No** (note that selecting **Format** begins formatting immediately, permanently deleting all data on card)

Format



Formatting in progress. Do not remove card from camera until formatting is complete. All data on card will be permanently deleted.

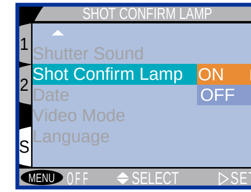
No

Return to setup menu without formatting card

Confirming Shutter Release

MENU

The red-eye reduction lamp next to the viewfinder can be set to provide visual confirmation of shutter release using the **Shot Confirm Lamp** item in the M-REC setup menu.

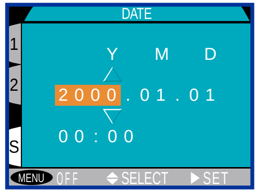


Option	Description
OFF	Red-eye reduction lamp does not fire when shutter is released (default)
ON	Red-eye reduction lamp fires when shutter is released in A-REC or M-REC mode

Date and Time

MENU

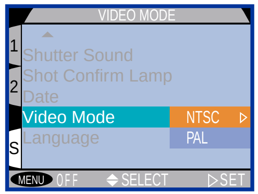
The **Date** option can be used to set the camera's clock-calendar. For more information on setting the date and time, see "First Steps: Setting the Time and Date."



Video Mode

MENU

The **Video Mode** sub-menu is used to select the video standard used when the camera is connected to a television set or video recorder.



Option	Description
NTSC	Use when connecting to NTSC devices
PAL	Use when connecting to PAL devices. Note that when this standard is selected, LCD monitor will turn off when video cable is connected.

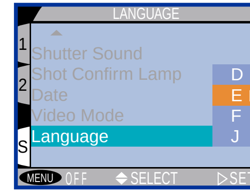
For more information on:

Setting the time and date
Connecting the camera to a TV or VCR

Language

MENU

The **Language** option in the M-REC and playback setup menus is used to choose the language for menus and messages displayed by the camera. For more information on choosing a language, see "First Steps: Choosing a Language."



For more information on:

Choosing a language

Connections

This chapter provides information on connecting your camera to a computer and to a television or videocassette recorder (VCR).

Click to go

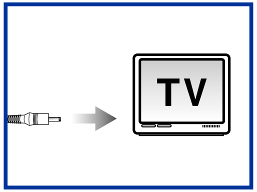
Connecting to a Television or VCR

Using the EG-900 video cable provided with your camera, you can connect your camera to a television or VCR to view photos on the television screen.

1 Insert the black plug on the EG-900 into the camera's video-out connector.



2 Connect the yellow plug to the video-in jack on the television or VCR.



3 Tune the television to the video channel.

4 Turn the mode dial to A-REC, M-REC, or PLAY. The television will mirror the image displayed in the camera's LCD monitor.

Connect the AC adapter (available separately) if you want the television to continue displaying images after the camera has entered sleep mode and the LCD monitor has turned off. Camera settings and photo info will not be displayed on the television screen when the LCD monitor is off.

The **Video Mode** items in the M-REC and playback setup menus offer a choice of NTSC or PAL standards for video output. Select a standard that matches that used in your television set. Note that when the PAL video standard is selected, the LCD monitor will turn off when the camera is connected to a video device (while recording is taking place at CONTINUOUS settings of **Ultra HS** or **Movie**, however, the LCD monitor will be used for display and video output will be suspended).

For more information on:

Video mode

Continuous settings

Connecting to a Computer

Photographs taken with the COOLPIX 990 can be viewed on your computer monitor or copied to disk for long-term storage or editing. You can connect your camera directly to your computer via the UC-E1 Universal Serial Bus (USB) or the optional SC-EW3/SC-EM3 serial cables and browse the contents of the memory card using the Nikon View software provided with your camera, or insert the memory card in the computer's card slot or card drive, where it will function as a disk.

Using Nikon View

Before you start

Before using Nikon View, read the documentation provided. The manuals for Nikon View are divided into two parts, both on the reference CD provided with your camera:

Quick Start Guide (HTML)

This guide, which can be viewed with Internet Explorer version 3.0 or later, or with Netscape Navigator version 3.0 or later, covers installation. To view:

- insert the reference CD into the CD-ROM drive
- double-click the **QKSTART.html** icon in the root directory of the CD

Reference Manual (PDF)

The reference CD includes separate reference manuals for Macintosh and Windows versions of Nikon View. These manuals provide complete operating instructions. Before they can be viewed, you will need to install Adobe Acrobat Reader version 4.0 or later. Installers for six language versions may be found on the reference CD; to install, open the folder for the language of your choice and double-click the installer icon. Once installation is complete, you can view the on-line documentation by clicking the **INDEX.pdf** icon in the root directory of the reference CD.

After reading the documentation, install Nikon View as instructed in the *Quick Start Guide*. You are now ready to connect the camera to your computer.

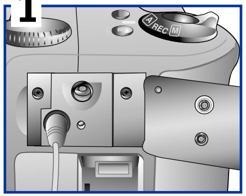
If you are unable to view the *Quick Start Guide*, refer to the README.txt text file in the root directory of the reference CD. This file provides system requirements and basic installation instructions.

Connecting your camera to a computer

The COOLPIX 990 is equipped with USB and serial ports. Follow the steps below to connect your camera to an IBM-compatible (PC) or Macintosh computer.

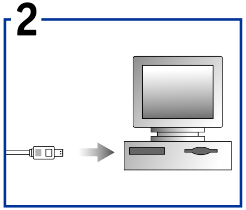
USB

1



Connect UC-E1USB cable to camera USB/ serial connector

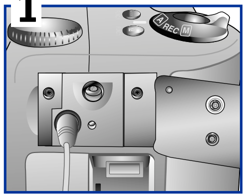
2



Connect cable to computer USB connector

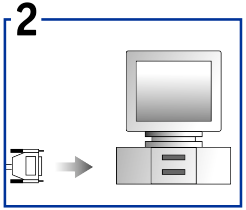
Serial (PC)

1



Connect SC-EW3 serial cable to camera USB/serial connector

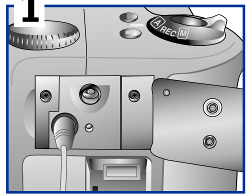
2



Connect cable to computer serial port

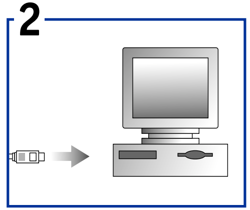
Serial (Macintosh)

1



Connect SC-EM3 serial cable to camera USB/serial connector

2



Connect cable to computer modem or printer port

3 Turn the camera on. The borders of the shutter-speed/aperture display in the control panel will light up ( ).



The LCD monitor, and all indicators apart from the battery indicator, will be off, and all camera functions will be disabled. Normal functioning will be restored when the cable is unplugged.

For information on the operations that can be performed while the camera is connected to your computer, see the NikonView *Reference Manual* for your platform.

✔

At all times when the camera is connected to the computer by USB cable, or while data are being transferred by serial connection to your compuer from the camera, the borders of the shutter-speed/aperture display in the control panel will flash on and off in sequence to form a "marching ants" marquee ( ). Do not unplug the serial or USB cables while data transfer is in progress. If connecting to the compuer by USB cable check the progress indicator on the computer to verify if data transfer is still in progress.

Do not use Nikon View with the camera while battery power is low or the batteries are exhausted. If the battery indicator changes to low or starts to flash while the camera and computer are connected, wait for the borders of the number display to stop flashing, then disconnect the camera and replace the batteries or connect the EH-31 AC adapter (sold separately).

Both the camera and the computer can be on when the cables are connected or disconnected, but do not disconnect the cable while data transfer is in progress.

To users of IBM-compatible computers:
The SC-EW3 serial cable (available separately) is for connection to a male 9-pin serial connector, standard on many IBM compatibles. Your PC may however use a different type of serial connector, in which case you will need to buy an adapter before you will be able to connect the cable.

Reading Photographs from Memory Cards

To read photographs directly from the camera's memory card, you will need:

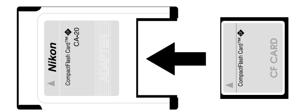
- a PC or Macintosh computer, and
- either a CF card reader or, if your computer is equipped with a PCMCIA Type II or Type III card slot, an EC-AD1 PC-card adapter (available separately from Nikon).

Using a CF card reader

The steps involved in connecting a CF card reader and inserting memory cards are covered in the documentation provided with your card reader. Once the card has been inserted, it will function as a disk, as described in Step 3 of "Using a PCMCIA card slot," below.

Using a PCMCIA card slot

1 Insert the memory card in the PC card adapter.



2 Insert the adapter into your computer's PC card slot as instructed in the documentation provided with your computer or PC card drive.

3 The card will now function as a disk. Photographs may be found in the folder DCIM in the card's root directory, stored in the folder shown in the playback mode information display. Photos (files with the extensions ".JPG" or ".TIF") can be viewed in any application that supports JPEG and TIFF formats. Movies (".MOV") can be played back in any application that supports the QuickTime format.

The COOLPIX 990 can play back only images that conform to the format used by the COOLPIX 950, 900s, 900, 800, and 700 digital cameras. It may not be able to display files created on a computer or by another make of camera. It may also not be able to display files that have been renamed or moved to a different folder on the memory card using a computer.

"info.txt"

Each camera-created folder on the memory card contains a text file ("info.txt") that provides photo information for each image in memory. This file can be viewed using a text browser such as SimpleText or Notepad. The file lists the images in the order recorded and gives the following information for each image:

- Image file name and type
- Camera type and firmware version
- Metering mode
- Exposure mode
- Shutter speed
- Aperture
- Exposure compensation
- Focal length and digital zoom factor
- Image adjustment setting
- Sensitivity (ISO equivalency)
- White balance
- Sharpening
- Date of recording
- Image size and quality

The information for each image is followed by a blank line.

The "info.txt" file can not be viewed using Nikon View.

You may need to install an ATA RAM-card driver before you will be able to read memory cards on a computer running Windows 3.1.

Nikon View can be used to browse photographs on a memory card. See the Nikon View *Reference Manual* for details.

Technical Notes

This chapter covers:

- camera care and storage
- the accessories provided with your camera or available for separate purchase
- troubleshooting hints and tips
- product specifications

Click to go

Caring for Your Camera

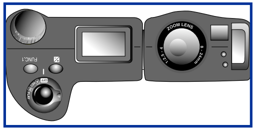
Cleaning

Lens/ view-finder	Use blower to remove dirt or dust. Wipe carefully with soft cloth to remove fingerprints or other stains. Do not touch with fingers.
LCD monitor	Clean with soft, dry cloth
Body	Clean with damp cloth; dry immediately

Do not use alcohol, thinner, or other volatile cleaners.

Storage

If you are not going to use the camera for a long period of time, remove the batteries before putting the camera away. Store with the lens rotated to a position adjacent to the control panel, as shown at right. Do not store your camera in locations that:



- are poorly ventilated or damp
- are next to equipment that produces strong magnetic fields, such as televisions or radios
- are hotter than 50°C (122°F) or colder than –10°C (14°F)
- have a humidity of over 60 %.

Accessories

What's in the Box

Purchasers of the COOLPIX 990 should find that the package contains the items listed below. Should you notice that any item is missing or damaged, contact your retailer as soon as possible.

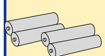

COOLPIX 990 digital camera (1)

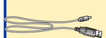


Lens cap (1)



CompactFlash-memory card (1)


AA (LR6) alkaline batteries (4)


UC-E1 USB cable (1)

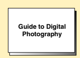

EG-900 video cable (1)



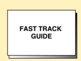
Software CD-ROM (1) containing Nikon View browser software



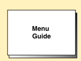
Reference CD-ROM (1) containing *Guide to Digital Photography* (electronic edition), *Nikon View Reference Manual*, *Quick Start Guide*, and Adobe Acrobat Reader 4.0 software



Guide to Digital Photography (print edition)



Fast Track Guide/For Your Safety



Menu Guide


AN-E990 camera strap (1)

Lens-cap string (1)

Standard accessories may differ in each country or area. Some of the optional accessories listed above at right may not be immediately available.

Optional Accessories

At the time this manual was written, the following optional accessories were available for the COOLPIX 990. Contact your local Nikon representative or retailer for details.

Lens converters
- FC-E8 fisheye lens converter
- WC-E24/WC-E63 wide-angle lens converters
- TC-E2 ×2 telephoto lens converter
- TC-E3ED ×3 telephoto lens converter

Slide-copying adapter
- ES-E28 Slide Copy Adapter

Remote release cable
- MC-EU1 Remote Cord

AC adapter
- EH-31 AC adapter

Carrying case
- CS-990 Soft Case

Flash accessories
- SK-E900 Multi-Flash Bracket Unit
- TTL Multi-Flash Adapter AS-10
- Multi-Flash Sync Cord SC-18/ SC-19

CompactFlash memory cards and adapters
- CompactFlash Cards
- EC-AD1 PC-card adapter

Serial cables
- SC-EW3 serial cable for PC/AT computers
- SC-EM3 serial cable for Macintosh computers

In addition to Nikon's EC-CF series, the COOLPIX 990 may be used with the following CompactFlash Cards:

- SanDisk Corporation's SDC-FB4/8/15/30/40/48/64/96
- Lexar Media Corporation's CF016/032/048/064 4× USB, CF016/032/048/064/080 8× USB and CF128/160 10× USB

For more details, please contact the respective company.

Troubleshooting

Check the list below before consulting your retailer or Nikon representative. Click the page numbers in the rightmost column for more information on how to solve the problems listed.

Problem	Possible cause	
Control panel display is blank	• Camera is off • Batteries are not correctly inserted or battery-chamber cover is not fully closed • Batteries are dead • AC adapter (available separately) is not properly connected	21 14 14
LCD monitor is blank	• Monitor is off. Press MONITOR button. • **Monitor Off** selected in **Display Mode** sub-menu of M-REC setup menu	15 86
No indicators appear in LCD monitor	• Indicators are hidden. Press MONITOR button until indicators are displayed. • Slide show is in progress	15 75
LCD monitor is hard to read	• Display options require adjustment • Monitor is dirty	86 98
No photo taken when shutter-release button fully pressed	• Mode dial is not set to A-REC or M-REC • Batteries are exhausted • AF lamp flickers: camera unable to focus • Flash lamp flickers: flash is charging • Number of exposures remaining in control panel shows zero: not enough memory remaining • Message "CARD IS NOT FORMATTED" appears in LCD monitor: card not correctly formatted • Message "NO CARD PRESENT" appears in LCD monitor: no memory card inserted in camera	21 14 34 25 21 102 16
Photos are over- or under-exposed	• Shutter-speed indicator in LCD monitor blinks: shutter speed too low or too high • Aperture indicator in LCD monitor blinks: aperture too wide or too small • Subject outside of flash range • Exposure compensation too high or too low	43 43 39

Problem	Possible cause	
Photos not in focus	• Subject not in focus area • AF lamp flickers: camera unable to focus • Manual focus distance does not match distance to subject	35 34 47
Flash does not fire	• Flash is set to (“flash cancel”) • Internal flash set to “off” in M-REC SPEEDLIGHT OPT > **Speedlight Cntrl** sub-menu • Battery level is low • Focus mode is set to (infinity) • Camera is set to **Continuous**, **Multi-shot 16**, **VGA Sequence**, **Ultra HS**, or **Movie** • Best-shot selection (BSS) is on • Setting other than **Normal** is selected in LENS sub-menu • EXPOSURE OPTIONS > **AE-Lock** option is on	31 64 14 33 52 54 66 59
Television does not mirror image in LCD monitor	• Camera not properly connected • Television not tuned to video channel • **Video Mode** setting does not match television video standard	93 93 91
Photos can not be played back	• Photos have been overwritten or renamed by computer	96
Computer can not read files on memory card	• Card not correctly inserted in card reader or adapter, or adapter not correctly inserted in computer • ATA RAM-drivers not installed on computer running Windows 3.1 • Application does not support JPEG, TIFF, or QuickTime formats	96
Nikon View displays communication error	• Camera not correctly connected to computer	95

Error Messages

When a problem occurs with the memory card or with the camera's internal programming or circuitry, an error message will be displayed superimposed on the image in the LCD monitor.

Message	Control Panel	Problem	Solution	
NO CARD PRESENT	CARD (blinking)	Camera can not detect memory card	Turn camera off and confirm that memory card is correctly inserted	16
THIS CARD CANNOT BE USED	CARD (blinking)	Error accessing memory card	Use approved memory card	99
CARD IS NOT FORMATTED FORMAT NO	CARD (blinking)	Card has not been formatted for use in COOLPIX 990	Using multi selector, highlight **FORMAT** and press multi selector to right to format memory card, or turn camera off and replace card	16
OUT OF MEMORY CARD IS FULL		Insufficient memory to record further photographs at current settings	• Reduce image quality or image size • Delete photographs from card • Insert new card	37 73 16
IMAGE CANNOT BE SAVED		Error encountered while saving photo or camera has run out of folder or file numbers	• Create new folder • Set **Seq. Numbers** in A-REC or M-REC setup menu to **OFF** • Reformat memory card	84 89 90

Message	Control Panel	Problem	Solution	
CARD CONTAINS NO IMAGES		Folder selected in playback mode contains no images	To play photos back, select folder containing images from playback **Folders** menu	75
ALL IMAGES ARE HIDDEN		All images in current folder are hidden	To play photos back, select another folder or use **Hide Image** to change hidden status of images in current folder	78
FILE CONTAINS NO IMAGE DATA		File created on computer or by different make of camera	• Delete file • Reformat memory card	72 90
THE FOLDER CANNOT BE DELETED		Folder contains hidden or protected photos	Folder can only be deleted if all images it contains are neither protected nor hidden	74
SYSTEM ERROR	Err	Error has occurred in camera's internal circuitry	Turn camera off, unplug optional AC adapter (if using), open and close battery-chamber cover, and turn camera on. If message persists, contact retailer or Nikon representative.	14

Specifications

Type	Digital camera
CCD	• $^1/_{1.8}$″ high-density CCD • Total number of pixels: 3.34 million
Image size	Selectable from: • 2,048 × 1,536 pixels • XGA (1,024 × 768 pixels) • VGA (640 × 480 pixels) • 3 : 2 (2,048 × 1,360 pixels)
Lens	• 3× Zoom-Nikkor • f = 8 – 24 mm [35 mm (135) format equivalent to 38 – 115 mm]/F 2.5 – 4 with macro • Nine elements in eight groups, all elements made of environmentally-friendly glass • Nikon Super Integrated Coating (SIC) applied • Glass-molded aspherical lens element included
Autofocus	• Contrast-detect TTL autofocus with 4,896-step autofocus control including macro range • Five-area multi AF or spot AF available
Focus modes	• Continuous autofocus (when using LCD monitor) • Single autofocus (LCD monitor off and/or single autofocus selected in M-REC mode) • Manual (fifty steps from 2 cm/0.8″ – ∞ with Focus Confirmation indication)
Shooting distance	• 30 cm (11.8″) – ∞ • Macro mode: 2 cm (0.8″) – ∞
Optical viewfinder	Real-image zoom viewfinder with LED indication
Magnification	0.4 – 1.1×
Frame coverage	Approx. 85 %
Diopter adjustment	–2 – +1 DP
LCD monitor	1.8″, 110,000-dot, low-temperature polysilicon TFT LCD with brightness and hue adjustment
Frame coverage	Approx. 97 % (through/freeze image)
Auto-off mode	30 s; can also be set manually (1/5/30 min.)
Storage	
System	Digitally stored (uncompressed TIFF or compressed JPEG)
Media	CompactFlash (CF) card
Shooting modes	• Fully-automatic ([A]-REC) mode • Custom ([M]-REC) mode (three combinations of mode settings can be memorized)

The LCD monitor may contain a few pixels that are always lit or that do not light. This is common to all LCD displays and does not indicate a malfunction. The monitor is lit by a fluorescent backlight. Should the display begin to dim or flicker, contact your Nikon service representative.

Shooting menu		• White balance • Exposure metering • Continuous • Best-Shot Selector (BSS) • Converters • Image adjustment (Auto, Normal, More Contrast, Less Contrast, Lighten, Darken, Monochrome) • Image Sharpening • Digital zoom (up to 4×)
Capture modes		• Single • Continuous • Multi-shot 16 (sixteen frames $^1/_{16}$ in size) • VGA Sequence • Ultra High-speed Continuous (up to eighty QVGA-size images at ~30 fps) • Movie (up to 40 s of QVGA-size frames at 15 fps
Exposure metering		Four-mode TTL metering
	Modes	• 256-segment Matrix • Center-Weighted • Spot • AF-spot
Shutter		Mechanical and charge-coupled electronic shutter
	Speed	8 – $^1/_{1000}$ s, Bulb
Aperture		Seven-blade iris diaphragm
	Range	3 EV in $^1/_3$-EV steps
Exposure		
	Control	• Exposure modes: ▪ Programmed Auto with Flexible Program ▪ Shutter-Priority Auto ▪ Aperture-Priority Auto ▪ Manual • Exposure Compensation (±2.0 EV in $^1/_3$–EV steps) • Auto Exposure Bracketing (five steps within $\pm^2/_3$ EV
	Range (ISO 100 equivalent)	• EV –2 – +15.5 (W) • EV –0.8 – +16.7 (T)
Sensitivity		ISO equivalent approx. 100, 200, 400, Auto; can be controlled in any exposure mode
White balance		• Matrix Auto White Balance with TTL control • Five-mode Manual with fine tuning (Fine, Incandescent, Fluorescent, Cloudy, Speedlight) • Preset
Self-timer		10 s or 3 s duration
Built-in Speedlight		
	Guide number	9/30 (at ISO 100, m/ft)
	Flash control	Sensor flash system
	Flash modes	• Auto Flash • Flash Cancel (off) • Anytime Flash (fill-flash) • Slow Sync • Red-Eye Reduction

External Speedlight	Multi-flash sync terminal connects to external Nikon Speedlight SB-28/28DX/26/25/24/22s through the Multi-Flash Bracket Unit SK-E900; built-in Speedlight can be canceled when using external Speedlight(s)
Playback	
Playback menu	• Single frame • Thumbnail (four or nine segments) • Slide show • Zoom playback (up to 4×)
Delete function	Deletes all or selected frames
Attributes	Hide and protect attributes can be set for each image
Interface	USB or serial interface (Windows: 115kbps, Macintosh: 230kbps)

USB

Platform	
Windows	**Macintosh**
OS Windows 98/98SE, Windows 2000 or later pre-installed model **CPU** MMX Pentium or later	**OS** Mac OS 8.6 Only built-in USB ports are supported **Models** iMac, iBook, Power Macintosh G3 (Blue/White) or Power Mac G4 or later

Interface

Serial

Platform	
Windows	**Macintosh**
OS Windows 95/98/98SE, NT4.0, Windows 2000 or later (optional SC-EW3 serial cable required)	**OS** Mac OS 8.1 or later (optional SC-EM3 serial cable required) Only built-in serial ports are supported

Video output	NTSC or PAL (selectable)
I/O terminals	• Power input • Video output • Digital output terminal (USB/Serial) • Sync terminal for external Speedlight
Power requirements	• Four 1.5 V LR6 (alkaline "AA" [LR40]) batteries; 1.5 V FR6 lithium, 1.2 V Ni-MH or 1.2 V NiCd "AA"-size batteries can also be used • AC adapter (optional)
Battery life	Approx. 1.5 hrs. when using LCD monitor and four 1.5 V LR6 [alkaline "AA" (L40)] batteries at normal temperature (20°C/68°F)
Operating environment	• Temperature: 0 – 40°C (32 – 104°F) • Humidity: under 85% (no condensation)
Dimensions (W × H × D)	Approx. 149 × 79 × 38 mm (5.9″ × 3.1″ × 1.5″)
Weight	390 g (13.8 oz) without batteries

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